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Currently, approximately 35 million foreign-born people (about 12% of the U.S. population) live in the U.S., and the majority of recent immigrants are from less-developed regions, a trend that is projected to continue. Given the fact that immigrants from developing countries will represent a crucial component of the future American cultures, all these implications can be profound on the future American urban landscape. It is therefore of great interest to urban and economic geographers to investigate immigrants' residential location patterns and how they vary by social mobility. Using the America Community Survey data of 2008-2012, this study investigates the diversity of immigrant populations and their housing locations in the Atlanta Metropolitan Statistical Area within 29 counties at census tract level. Specifically, the research examines whether immigrants' countries of origin, language, socioeconomic, and regional background influence the geographic distributions of foreign-born populations. This dissertation had three broad objectives: (1) to determine the geographic distributions of foreign-born populations as part of the population growth process in the Atlanta Metropolitan Statistical Area (MSA); (2) to analyze the magnitude of segregation among immigrant populations in the Atlanta metropolitan area; and (3) to evaluate the demographic and housing conditions of foreign-born populations in segregated vs. non-segregated census tracts in the Atlanta Metropolitan Area. Unlike past studies, this research extended the literature by documenting a broader overview of residential locations across different

groups of immigrants such as by their origin of countries, regions, continents, as well as socioeconomic conditions of origin of the countries. The approaches include calculating location quotients and an index of dissimilarity and using geographic information systems to visualize the results. Gwinnett and Fulton Counties have the highest foreign-born population. However, immigrants live in highly segregated communities in both counties. Immigrants are more segregated from native-born Whites in Gwinnett County and native-born Blacks in Fulton County. The Location Quotient (LQ) of foreign-born within native-born population analysis shows that most of the Atlanta MSA is segregated with an under represented LQ of <0.25. This level of segregation occurs in 724 counties around the entire MSA, accounting for 76.14% of all tracts. The place of birth has an influence on immigrants' home locations at the census tract level. They tend to live near people from their own country. These patterns may imply that immigrants tend to get help from each other (e.g., housing, living and carpool). The study also found that the average segregation level is higher among all education levels of immigrants, but is slightly less among immigrants with graduate and professional level educations. Those tracts with over-representation of foreign-born residents have a high percentage of those with less than a high school level education; this group is 32% of the educated foreign-born population. Overall, immigrant groups in the Atlanta Metropolitan Statistical Area (MSA) reflect the fact that location patterns differ from those of natives in various aspects. The index of dissimilarity values indicates that overall immigrant groups in the Atlanta metropolitan area are segregated from native-born populations at the county level, but the magnitude of segregation is low. However, foreign-born populations from

developing countries, non-Western countries, Central America, and the Caribbean are highly segregated from native-born Whites.

KEY WORDS: Atlanta, foreign-born, immigrants, housing location, segregation, demography, income, education, English proficiency, GIS

A GEOGRAPHIC ASESSMENT OF IMMIGRANTS' LOCATION PATTERNS, SEGREGATION, AND HOUSING CONDITIONS IN 21ST CENTURY AMERICA: EVIDENCE FROM THE ATLANTA METROPOLITAN STATISTICAL AREA

by

Arwa Mohamed Alnaass Altaher

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Approved by

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Committee Chair

DEDICATION

I would like to dedicate this dissertation to my husband Mohamed Naser, my father Dr. Mohamed Alnaass, my mother Mrs. Maryam Altaher, and my children Ali, Fatima, Miryam, Mays and Sema. I hope this research will play a vital role in planning and economic development of population growth and the distribution in urban areas that collectively make United States a truly unique and amazing place to develop, become stable, and to integrate with different cultures.

APPROVAL PAGE

This dissertation, written by Arwa Mohamed Alnaass Altaher, has been approved by the following committee of the Faculty of The Graduate School at The University of North Carolina at Greensboro.

Committee Chair Selima Sultana

Committee Members Elisabeth Nelson

Paul A. Knapp

Shelly Brown-Jeffy

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Date of Acceptance by Committee

_____

Date of Final Oral Examination

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I would also like to thank my committee members, Drs. Brown-Jeffy, Knapp, and Nelson for their support and guidance throughout this dissertation process. There is no doubt that the quality of my dissertation is a reflection of my committee's collective efforts. I would also like to thank my friends, Megan Grigg, Joyce Clapp, and Nabeela Farhat for their support for improving my knowledge in English and the geographic information systems (GIS). I would also like to thank my family who has supported me throughout my personal life as well as my academic study. Without their patience and support, which continued to motivate me, accomplishing my doctoral degree would have

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CHAPTER I

INTRODUCTION

1.1 Research Background and Significance

This dissertation investigates the diversity of immigrant populations in the Atlanta Metropolitan Statistical Area (MSA) at micro-scale (census tract level) by examining their residential distribution patterns, segregation effects, and housing outcomes using the five-year estimated America Community Survey (ACS) data of 2008-2012. Immigrant or foreign-born populations play a significant role in shaping population growth and changing demographic characteristics of the United States. The term *immigrants* or *foreign-born* is used to describe people who are born outside the United States and have not earned citizenship by birth directly (Kandel, 2011), and both terms are used interchangeably in this dissertation. The United Nations estimates that 2 million people from developing nations will move to developed countries annually until 2050, and of those more than half will migrate to the United States (UN, 2014). This brings an argument upfront that immigrants will continue to influence American life, such as where people live, work, shop, and travel (Mather, 2012).

Given that in the last half-century foreign-born populations have come from different parts of the world, diversity in national origin has become a salient feature of the population in America.

The 2010 Census shows that approximately 35 million foreign-born people (about 12% of the U.S. population) live in the United States, with the majority from less developed regions (U.S. Census, 2010). According to the Statistical Yearbook of the Immigration and Naturalization Trends in the United States of 2016, the 7.3 million immigrants admitted to the United States during the 1980s (not counting undocumented immigrants) were predominantly non-European— 87% came from Asia and South America—compared with the 8.8 million admitted during the 1910s, who were predominantly from Europe. More than 653,000 immigrants were naturalized in the United States in fiscal year (FY) 2014, bringing the total number of naturalized U.S. citizens to 20 million, nearly half the overall immigrant population of 42.4 million (Zong and Batalova, 2016). In the recent decades, Mexico, the Philippines, China/Taiwan, South Korea, and Vietnam were the top five sending countries, followed by the Dominican Republic, India, El Salvador, and Jamaica. Immigrants from Mexico alone accounted for more than one-fifth of the total legal admissions as well as half of all illegal immigrants (Zhou, 1997)

Labor market conditions and job accessibility by transportation are important determinants of new immigrants' location choices (Jaeger, 2007). That is why historically immigrants have often concentrated in the central city. Although many immigrants continue to follow that traditional route, significant numbers of new arrivals have bypassed cities and moved directly into mainstream labor markets in suburban locations (Zhou, 1997). This makes studying settlement patterns of immigrants more complicated

in the United States. The assimilation among population groups has been found to be different, especially between immigrants from different regions and native-born populations, depending on their sociodemographic characteristics, economic status, and cultural backgrounds (Xie and Greenman, 2011). The opportunity of employment and housing outcomes among various immigrant groups seem to be linked with ability to speak English, education level, income, marital status, and size of household (Ellis et al, 2006). Some research (e.g., Pamuk, 2004) suggested that immigrant groups would cluster together per their affordability level. A study in Los Angeles, California, however, reported substantial differences among ethnic groups in residential location patterns during their assimilation (Yu and Myers, 2007).

Since the 1950s, segregation has become one of the push factors of population distribution, especially in the U.S (Wilson, 2011). Most studies in last half-century focused on ethnicity segregation between Blacks and Whites as two main parts of American population groups. Those studies find that it is not just about ethnic clustering but also a part of an economic, social and geographic phenomenon that influences location choices and housing conditions (Frazier, 2010). Immigrants have limited information about new place of settlement, and hence their location choices in the United States are affected by different factors in the beginning of their arrival to a new place. Mostly, this new place links the immigrants to similar groups of their culture, which helps them to get access to primary services (Scott et al., 2005). Immigrant connections to other parties are strongly dependent on their socioeconomic outcomes, such as their

ability to commute to resources, their access to services, and their access to social networks (Wang and Maani, 2014). Usually immigrants' goals are to seek preferable neighborhood conditions such as better schools, safe neighborhoods, and good quality homes when coming into a new place (Poppe, 2013).

Other studies (e.g., Singer, 2004) suggest that immigrants bring new patterns of settlement: they not only cluster in areas that were previously occupied by mostly immigrants, they also cluster in new areas that are historically occupied by native-born populations. Residential housing choices are usually modified by level of socioeconomic status: higher- income immigrants tend to live near neighborhoods with a higher percentage of non-Hispanic whites compared with immigrants of low socioeconomic status who tend to live in low price areas with other minority populations (South et al., 2008). Therefore, socioeconomic statuses play a role in location choices, such as people choosing an area with higher income household residents in a suburban area because they prefer to segregate themselves from low-income people (French, 2008). Other factors such as types of jobs (i.e., industry, farming, construction, manufacturing, transportation, retail trade) can influence immigrant distributions (Hirschman and Mogford, 2009). The ethnicity segregation appears because of the impacts of all above reasons that control the immigrant's residential housing choices.

Immigrants additionally face English language skills as one of the key factors for housing outcomes (Forrester et al., 2014). The concentration among immigrant groups is dependent on the job locations, opportunities of finding adequate housing in terms of

price, religious activities, as well as cultural and language characteristics (Elliot and Sims, 2001). Chiswick and Miller (2002) focused on language spoken at home and the role it plays in immigrant housing concentration. Their research measured the linguistic concentration among foreign-born people and its influence on individuals' profits in positive and negative ways. Findings of their research suggest that the formation of ethnicity enclaves depends on the similarities of languages and specific services provided in the areas. Often locations chosen by immigrants are based on the availability of services and their needs. Services targeted to particular immigrant groups are so important at the initial stage of immigrants' lives that sometimes immigrants prolong their dreams for quality areas until they become familiar with American culture (Ghosh, 2007). A few studies (e.g., Guo and Bhat 2006; Singer, 2004; Farrell, 2014) concluded that the recent trend of immigrants' initial entry in suburban locations is due to increased job opportunities in suburban and rural areas which do not need English proficiency, and probably do not need professional skills or a high degree of education.

1.2 Purposes of the Dissertation

The residential location patterns of immigrant populations presented earlier has become an important topic among urban geographers for understanding segregation and inequality among immigrant population groups in the USA. With the exceptions of a few (e.g. Farrell, 2014), many of those debates are mostly based on the distribution of populations between native-born Whites and Blacks; there is little emphasis on foreign-born populations, specifically based on their country of origin and regions. The research

focused on detailed populations is also mostly based on larger metropolitan areas such as Los Angeles, Chicago, New York, and Houston, and these studies use the entire MSA as unit of analysis (Frey and Myers, 2005). Other studies explain the distribution and segregation patterns of all populations in the study area, yet do not show intraregional variation within the metropolitan area. Therefore, more applied inquiries are needed as more details data are introduced at finer scales, such as census tract levels (Louf and Barthelemy, 2016).

Given the fact that immigrants from developing countries will represent a crucial component of the future American cultures, all these implications can be profound on the future American urban landscape. It is, therefore, of great interest to urban and economic geographers to investigate immigrants' residential location patterns, and how they vary by social mobility. Using five-year estimations of the America Community Survey (ACS) data of 2008-2012 at census tract level, this dissertation investigates the diversity of immigrant populations in the Atlanta MSA by examining their residential distribution patterns, segregation effects, and housing outcomes in detail (Figures 1.1 and 1.2).

This dissertation has three broad objectives:

1. To assess the geographic distributions of foreign-born populations as part of the population growth process in Atlanta Metropolitan Statistical Area (MSA).
2. To assess the magnitude of segregation among immigrant populations in the Atlanta Metropolitan area.

3. To evaluate the demographic and housing conditions of foreign-born populations in segregated vs. non-segregated census tracts in the Atlanta Metropolitan Area.

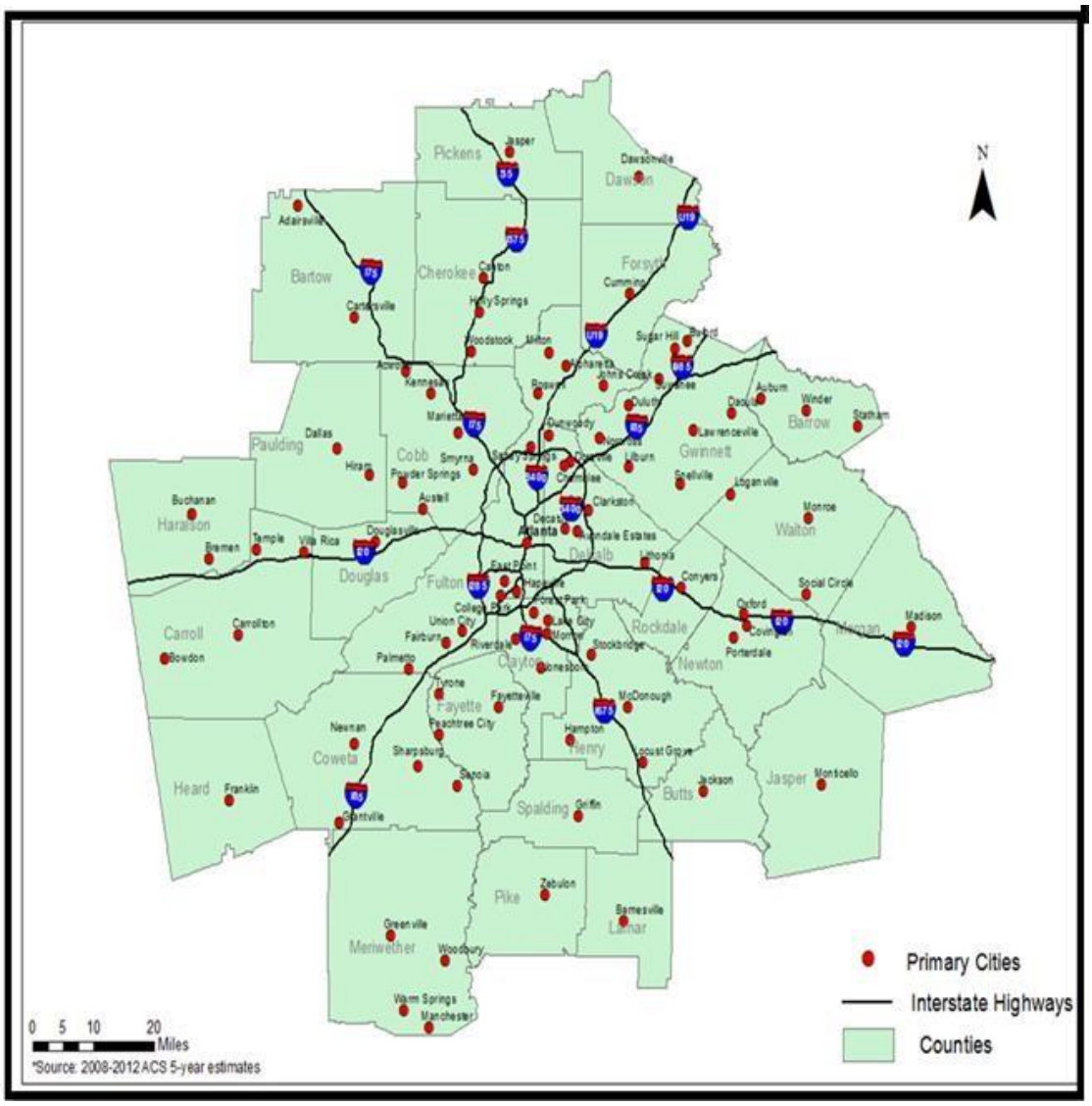

Figure 1.1. Atlanta-Sandy Spring-Roswell Metropolitan Area within 29 Counties. Source: U.S. Bureau of the Census, American Community Survey, 2008-2012.

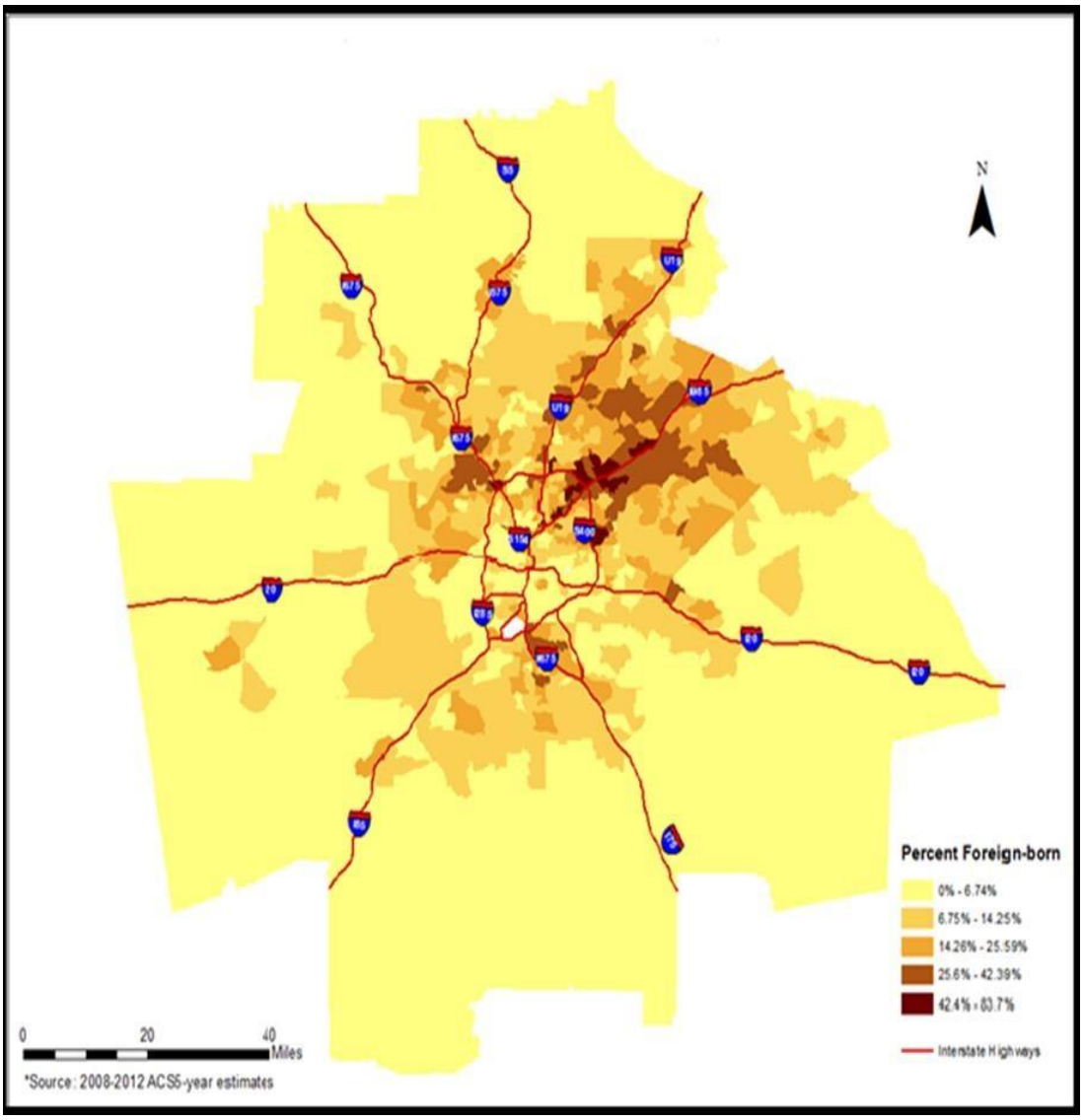

Figure 1.2. Percentage of Foreign-born Population by Census Tract in Atlanta-Sandy Spring-Roswell Metropolitan Area, 2013. Source: U.S. Bureau of the Census, American Community Survey, 2008-2012.

1.3 Organization of Dissertation

My dissertation is divided into five chapters. Chapter I focuses on an overview of the problem statement, and focuses on previous studies. Chapter II examines the

geographic distribution of foreign-born populations in the Atlanta metropolitan area. Chapter III assesses segregation patterns among foreign-born and native-born populations as well within immigrant groups across the Atlanta metropolitan area. Chapter IV examines demographic and housing conditions of foreign-born populations in segregated vs. non-segregated census tracts. Chapter V draws the overall conclusions of the dissertation.

CHAPTER II

THE GEOGRAPHIC DISTRIBUTION OF FOREIGN-BORN POPULATION IN THE ATLANTA METROPOLITAN STATISTICAL AREA, 2013[1]

2.1 Introduction

This study seeks to explain the geographic distributions of foreign-born populations as part of the population growth process in the Atlanta Metropolitan Statistical Area (MSA) using the America Community Survey (ACS) five-year estimates summary file data of 2008-2012. Research on residential location patterns of immigrants has been a major interest to urban and economic geographers (Pagliara and Wilson, 2010) for understanding immigrants' merger process into American culture (Massey, 1994). Labor market conditions and job accessibility by transportation are important determinants of new immigrants' location choices (Castles, Haas, and Miller, 2013). That is why historically immigrants have often concentrated in the central city. Although many immigrants continue to follow that traditional route, significant numbers of new arrival have bypassed cities and moved directly into mainstream labor markets in suburban locations (Zhou, 1997). Additionally, in recent years, immigrants from various origins have contributed to increasing ethno-racial diversity in American metropolitan areas (Farrell, 2014). The assimilation among immigrant groups has been found to be

[1] Altaher, Arwa. 2017. To be resubmitted to *Geographical Review*.

different, especially between immigrants from different regions as well as with native-born populations (Xie and Greenman, 2011). This makes studying settlement patterns of immigrants more complicated in the United States. Employment and housing opportunities and outcomes among various immigrant groups seem to be linked with ability to speak English, education level, income, marital status, and size of household (Frey, 2011; Hall, 2013). A study in Los Angeles, California, however, reported substantial differences among ethnic groups in residential location patterns during their assimilation (Yu and Myers, 2007). Studies (e.g., Farrell, 2014; Wilson, 2011) have shown that immigrant location patterns are based on their socioeconomic status (e.g., skilled vs. nonskilled, level of education etc.). Additionally, lack of proficiency in English language is one of the key factors for immigrants' housing outcomes and job outcomes (Forrester et al., 2014). A few studies (e.g., Frey, 2011; Hall, 2013) have noted that new immigrants tend to live in areas that offer social networks and services related to similar cultural and economic backgrounds and opportunities for ethnic labor markets. That is why sometimes-specific groups of immigrants have effects on the distribution of populations and their location choices (Booth et al., 2010).

While literature on immigrants' location patterns is rich, it is unclear how immigrants from different regions of the world and origin of countries choose their housing locations at the micro scale (Farrell, 2014). I argue in this paper that immigrants from less developed countries are distributed differently than those from developed countries because they move to the U.S.A for economic advancement, and hence they are

willing to take any job that will make their life better than their origin of the countries (Conteh, 2013). On the other hand, immigrants from developed countries (e.g., Korea, Japan, Western Europe) seek more opportunities for better quality of life in the U.S.A than what their origin of countries socioeconomic status could have offered (Zong and Batalova, 2016). To move the debate a step forward, detailed information about immigrant populations and housing data at a fine resolution are essential. This study therefore uses census tracts as the level of analysis, as these are the smallest zones for which detailed housing and demographic data were available at the time the research was conducted. This paper examined the distribution patterns of immigrants by place of birth (continent, region, and country of origin) with the hope of explaining the social restructuring of housing markets in the Atlanta MSA.

2.1.1 Prior Research on the Geographic Distribution of Foreign-born Population

Pamuk (2004) explores two theories to explain the patterns of residential location choices of immigrants that are different in many ways from those of long-term residents of the U.S. and may have a strong effect on choices of location, economic activities and transportation options. The human ecology approach suggests that immigrants are willing to live in congested conditions as a transition phase before improving their socioeconomic conditions and moving to middle-class neighborhoods, in the process of spatial assimilation. The second theory maintains that ethnic clusters provide immigrants with socioeconomic and cultural networks, or agglomeration benefits; therefore, immigrants are not likely to relocate when their socioeconomic conditions improve. Both

theories suggest a clustering pattern of new immigrants that may affect their cultural experience and therefore their location choice.

Other studies (e.g., Singer, 2004) suggest that the recent immigrants bring new patterns of settlement: they not only cluster in areas that were previously occupied by mostly immigrants, they also cluster in new areas that are historically occupied by the native-born populations.

Smart's (2011) study at the metropolitan level of analysis, indicated that economic level and quality of life factors play an important role in controlling location choices, and a larger role than ethnic networks factors in immigrants' settlement patterns. Residential housing choices are usually modified by the level of socioeconomic status: higher-income immigrants tend to live near neighborhoods with a higher percentage of non-Hispanic whites compared with immigrants of low socioeconomic status who tend to live in low price areas with other minority populations (South et al., 2008). Therefore, socioeconomic status plays a role in location choices, such as people choosing an area with higher-income household residents in a suburban area because they prefer to segregate themselves from low-income people (French, 2008); hence, the ethnic clustering appears.

Studies (e.g., Frazier, 2010) focused on ethnic clustering suggest that ethnic clustering is a part of an economic, social, and geographic phenomenon that influences location choices. Immigrants have limited information about the new place of settlement, and hence their location choices in the United States are affected by different factors in

the beginning of their arrival to a new place (Scott et al., 2005). Mostly, this new place links the immigrants to similar culture groups, which helps them to get access to primary services. Immigrant connections to other parties are strongly dependent on their socioeconomic outcomes, such as their ability to commute to resources, their access to services, and social networks (Wang and Maani, 2014). Hugra and Becker (2005) found that the growth of immigrant populations in some census tracts depends especially on their cultural influences in the early stages of living in those neighborhoods. Other research suggests that language spoken at home is an important factor (Chiswick and Miller, 2004).

Recent studies on immigrants and poverty in America's suburbs showed that the suburbs have grown more than central cities due to an increase in immigrant population in the last three decades (Wilson, 2011; Wilson and Singer, 2011). However, the majority of immigrants live in those suburban areas that are close to the central cities, known as first ring suburbs. The racial and ethnic diversity of these first ring suburbs mirrors today that of the central cities in 1980 (Logan, 2014). Clearly, the distribution of immigrants has moved away from the traditional local places in the U.S such as central cities to suburbs. This change is affecting residential integration in suburbs, which is influenced by the quality of housing, schools, and better public services, which influence settlement patterns (Hall, 2013). However, a few studies (e.g., Guo and Bhat 2006; Singe., 2004; Farrell, 2014) concluded that the recent trend of immigrants' initial entries into suburban locations is due to increased job opportunities in suburban and rural areas which do not

need English proficiency, and probably do not need professional skills or a high degree of education.

There are some other factors related to immigration location choices which depend on the immigrants' background characteristics (e.g., origin of country, language) and how those characteristics interplay in their location decisions (Izyumov et al., 2000). For example, most African immigrants come to the United States for economic advancement and hence they are willing to take any job that allows them to live in ethnically clustered neighborhoods (Conteh, 2013). On the other hand, immigrants from developed countries, especially from Western Europe, are better prepared to make the transition to American culture. A study on Asian immigrants shows that if immigrants came to the U.S and were well prepared for the American style of life, they had more opportunities to have a better life immediately (Zong and Batalova, 2016). Similarly, other groups are better prepared, including groups like Indians and Koreans, whose members often come to the U.S searching for professional employment or higher opportunities (Alba et al., 1999). These immigrants are also able to directly enter suburbia, and stabilize favorable neighborhood amenities in a comfortable area without undergoing the traditional process of spatial assimilation that immigrants from developing countries follow (Pais et al., 2012).

In sum, many factors can influence how immigrants choose their residential location. First, there are pull factors, which include demographic, economic, geographic, and cultural factors. Each of these categories includes a sub-set of factors. For example,

demographic characteristics include the size of an already existing immigrant community in the MSA, and the total population size in a MSA. The economic characteristics include income levels, employment situations, and the structure of the local economy, along with taxation and welfare levels. Geographic factors include proximity to the central MSA, access to all services, the cost of housing, and climate, which all direct immigrants' in original countries to choose new places for living. Cultural factors include strength of educational and cultural facilities in the area, such as universities, schools, theaters, museums. In addition, pull factors and push factors both have affected immigrants' population groups; however, push factors have critical roles that control immigrants' location choices, such as the education level of an immigrant and economic opportunities, such as employment.

Most of our knowledge of immigrants' settlement patterns, however, come from large cities in the Midwest, East and West Coast such as Chicago, New York, Los Angeles and San Francisco; very few are based on Southern cities (Huang and Liu, 2016). Many of those studies also used larger areal units for their analysis such as MSAs or counties to infer individual decisions, which undermine our ability to understand immigrants' decisions at local scales (e.g., census tract) (Howell et al., 2016). Additionally, most studies (e.g., Wilson and Singer, 2011) often relied on data that represent immigrant populations either as one homogeneous group or ethno racial groupings (e.g., Asian, Latino etc.). This is problematic given the cultural and linguistic diversity that exists among immigrants by regions and economic status of the

immigrant's origin of country (Lichter et al., 2016). Ideally, it would be more applicable to understand the geographic variations of immigrants' residential location patterns within an urban context if more details related to demographic and geographic scale data become available.

This research thus focuses on census tracts using five-year estimations of the America Community Survey (ACS) data of 2008-2012 for better understanding the extent of spatial clustering of different groups of immigrants in Atlanta MSA. Very specifically, this research examines whether immigrants' place of birth by continent or region of origin and economic and cultural status influence e distribution patterns. Consequently, this study seeks to add more to the growing literature that examines the spatial distributions of immigrants and relationships. The results of this study can be useful for urban and economic planners for formulating the resources for the immigrants housing choices.

2.2 Research Questions

This study seeks to add to the growing body of literature related to the geographic distribution of immigrant population trends at a micro scale within the Atlanta MSA by exploring the following research questions:

1. How are foreign-born populations geographically distributed by the origin of continent, region, economy, and culture in the Atlanta MSA?
2. Are there particular patterns or clusters that emerge by the different groups of foreign-born populations in the Atlanta MSA?

3. What factors explain these spatial distributions of foreign-born populations from different backgrounds? Are they associated with local job opportunities or are they associated with their level of education or with their proficiency in English?

2.3 Research Design: Methods, Study Area, and Data

2.3.1 Methods

The percentages of foreign-born populations from all categories are calculated both at the county and census tract level for showing geographic distribution populations by region background. My study also compared the geographic distribution of foreign-born populations by country of origin based on level of development: developed vs. non-developed using the United Nation's classifications of 2013. This analysis also seeks to explain the associated cultural background of immigrants for their residential location patterns and hence the foreign-born populations are categorized by their origin of Western and non-Western country. A correlation coefficient statistical analysis is used to find associations between distributions of foreign-born populations and types of jobs, level of education, and proficiency of English. Specifically, the degree of correlation will explain which jobs are associated with foreign-born populations by region of origin.

2.3.2 Study Area

The 29 counties of the Atlanta Metropolitan Statistical Area (MSA), which is made up of 961 census tracts, from the Southeastern part of the U.S., is used for this research (Figure 2.1). The Atlanta MSA was chosen because it is one of the largest urban

areas in the United States and has the second fastest growing foreign-born population among the nation's 20 largest metropolitan areas. Atlanta's immigrant population is higher than the national average of 13% (Kneebone, 2011). Atlanta has become as an international gateway for communities from diverse backgrounds, such as native-born Whites, native-born Blacks, and immigrants from international sources with different cultural and religious landscapes (Strait and Gong, 2015). The Atlanta MSA has been become forefront of the Sunbelt's economic and population growth during the last few decades (Strait and Gong, 2015). Atlanta is the most business-friendly American major city, and among the top ten American cities of the future (Metro Atlanta Profile, 2011).

According to ACS 2013, the Atlanta MSA had a total population of 5,309,620; the foreign-born population accounted for 13.75 percent. It is expected that by 2020, the population for 29 counties will cross 6.4 million, including an additional 1.25 million foreign-born populations. In addition, Atlanta become on the tops list of metropolitan areas with the large percentage with 95% of immigrants who located and lived in the suburbs areas. In short, the Atlanta MSA in Georgia is thriving economically and culturally (Alvarez, 2016) and a perfect laboratory to ask the research questions that I proposed in this paper.

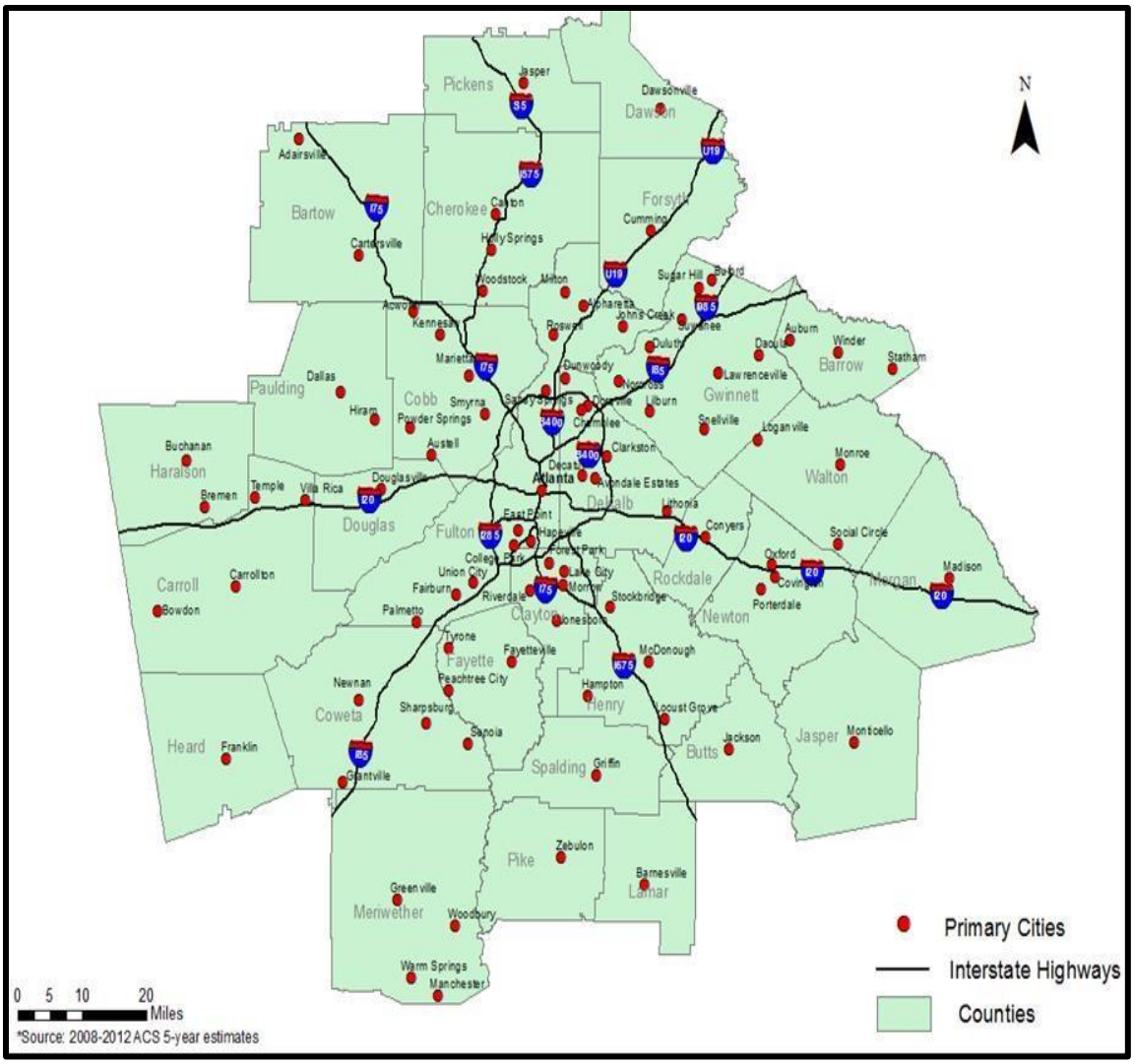

Figure 2.1. Atlanta-Sandy Spring-Roswell Metropolitan Area within 29 Counties, 2013. Source: U.S. Bureau of the Census, American Community Survey, 2008-2012.

2.3.3 Data

This study used detailed housing and demographic characteristics data at the census tract geographic level from the five-year estimations of the America Community Survey (ACS) data of 2008-2012. The 2013 ACS data includes variables that provide

detailed demographic and socioeconomic characteristics of foreign-born populations, including immigrants' origin of the country. Socioeconomic demographics such as immigrants' level of education and proficiency in English language are also included. Additionally, the shapefiles for the boundaries of the 29 counties of the Atlanta MSA and census tracts boundaries within these 29 counties were collected from Tiger census boundary files.

2.4 Results and Discussion

2.4.1 Distribution of Foreign-born Population by County in Atlanta MSA

First, I use county level analysis to give a general idea about the distributions of foreign-born population in the Atlanta MSA (Figure 2.2). Three types of patterns emerged from the analysis: (1) the counties with the highest percentage of foreign-born population (ranging from 10-25%) are DeKalb, Gwinnett, Clayton, Rockdale, Forsyth, Cobb, Douglas. Gwinnett County has the highest percentage of foreign-born (25%) population; this county is identified as a suburban area; (2) counties with 10% or less foreign-born population are Henry, Fayette, Walton, Morgan, Jaspar, Butts, Lamar, Spalding, Newton, Barrow, Carroll, Bartow, Pickens, Dawson, Cherokee, Pike, Lamar, Bartow, and Paulding County. All these counties are in peripheral areas of Atlanta MSA; (3) Counties that have no foreign-born population are Heard, Haralson, and Meriwether (Figure 2.2 and 2.3). These counties are mostly rural in nature.

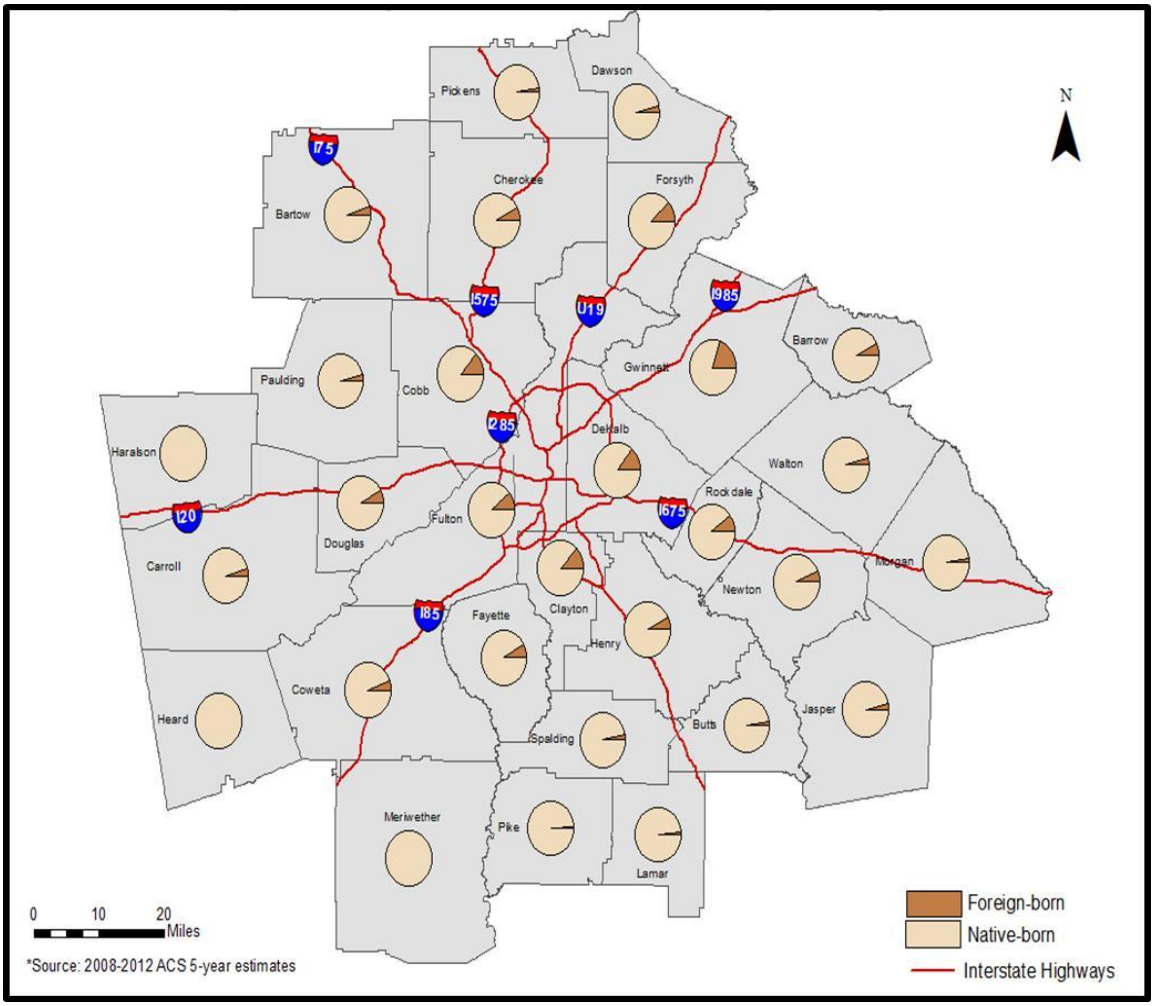

Figure 2.2. Foreign-born Population in Atlanta-Sandy Spring-Roswell Metropolitan Area by County Level, 2013. Source: U.S. Bureau of the Census, American Community Survey, 2008-2012.

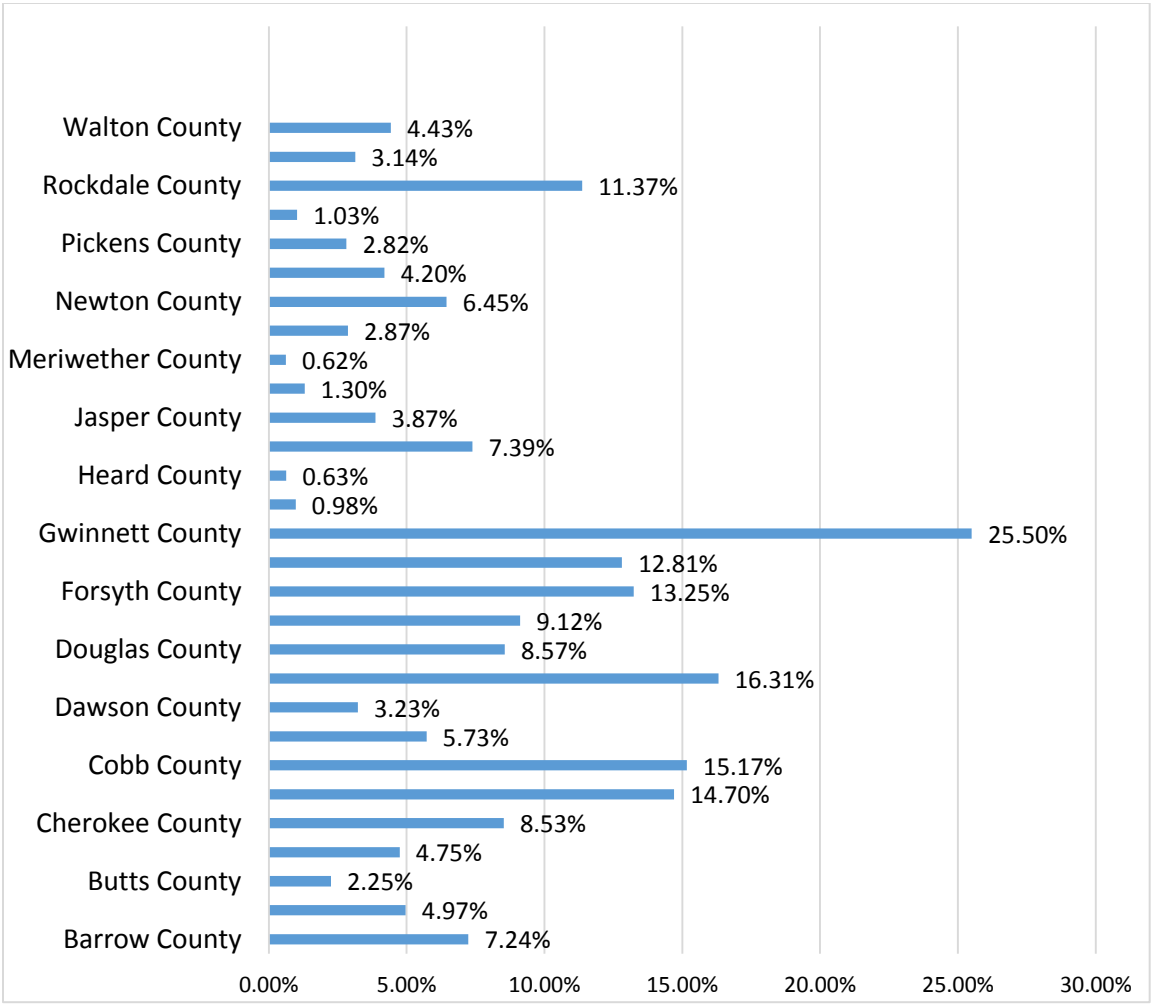

Figure 2.3. Percentage of Foreign-born Population by County in Atlanta-Sandy Spring-Roswell Metropolitan Area, 2013. Source: U.S. Bureau of the Census, American Community Survey, 2008-2012.

2.4.2 Distribution of Foreign-born Populations at County Level by Continent of Origin

To visualize the ethnic diversity of foreign-born populations in each county of Atlanta MSA, I have calculated foreign-born populations by continent of origin and presented in Figure 2.4. The results show that foreign-born populations from different continents are dispersed in all 29 counties of Atlanta (Figure 2.4).

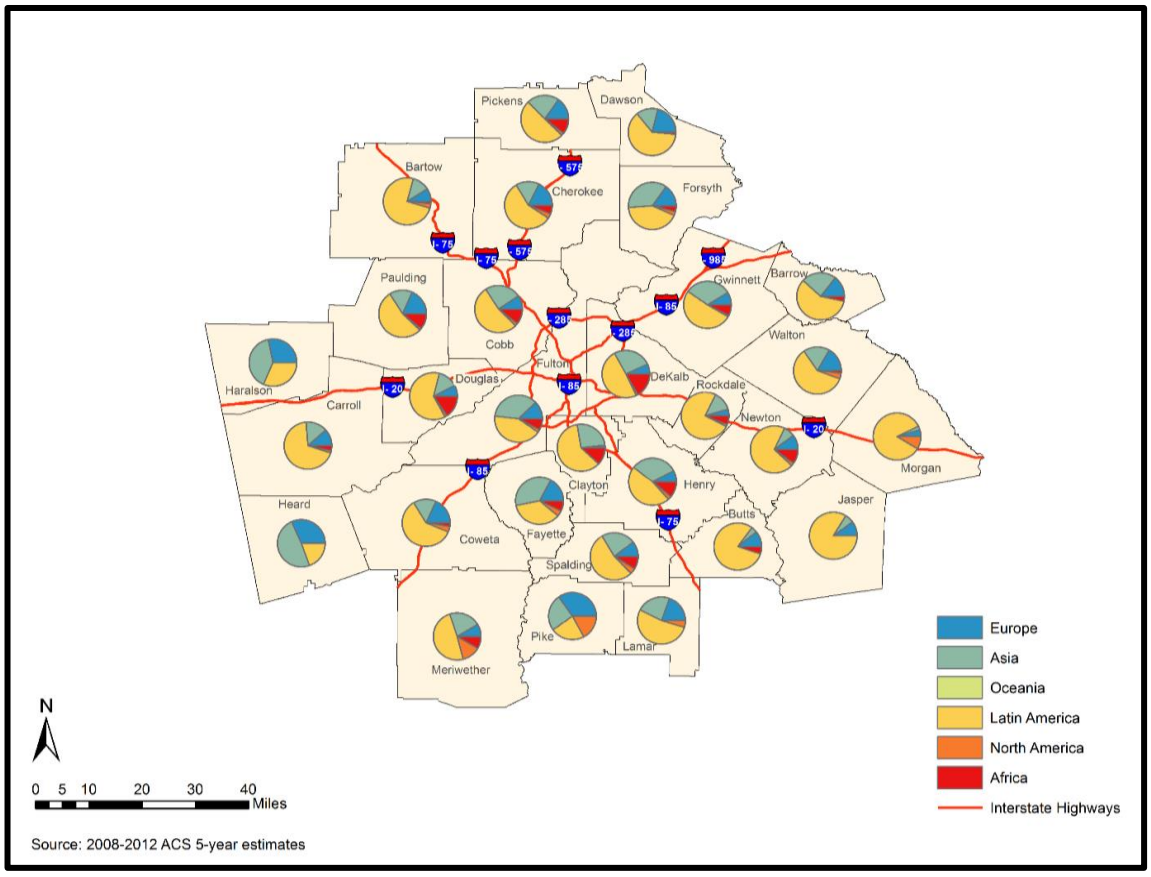

Figure 2.4. Percentage of Foreign-born Populations by Continental Origin in County Level in Atlanta-Sandy Spring-Roswell Metropolitan Area, 2013. Source: U.S. Bureau of the Census, American Community Survey, 2008-2012.

A large percentage of foreign-born populations from Asian and African origins concentrate in the urban areas; however, a large percentage of foreign-born Asians are also present in the suburb and exurb areas of the MSA (Figure 2.4). The geographic patterns of foreign-born populations in the Atlanta MSA are consistent with studies that found that the high presence or the growth of immigrant groups in exurbs can be related to their lifestyle and lower cost of living in that area (Mylott, 2009).

Foreign-born populations from the North American continent are mainly clustered in the southeastern part of the MSA, in the counties of Meriwether, Lamar and Pike. European foreign-born populations are distributed throughout counties in the MSA, but their presence is very low within Clayton County. This is partly because the county is known to have high Black and Latino populations and has a high poverty level (Sultana, 2005). The percentage of foreign-born populations from Latin America are prominent within the MSA, with Morgan, Jasper, Newton, Butt and Henry counties having the highest concentration of Latinos, while Heard County has the lowest concentration of this population. In contrast, of past research, this analysis shows new patterns in the residences of foreign-born populations who are now spreading throughout the urban and exurbs areas. Based on this analysis, it can be inferred that the networks and housing locations of foreign-born populations have increased further away from the central MSA area.

2.4.3 Distribution of Foreign-born Populations by Region of Origin in Census Tracts of Atlanta MSA

To demonstrate further the diverse characteristics of foreign-born populations in the Atlanta MSA, foreign-born populations that originated from various regions of the world are calculated at the county and census tract level. To categorize the immigrant populations by regions of origin, I used the regions categorized by the United Nations Division of World Regions in 2013. Foreign-born populations from the African continent, for example, are shown in the analysis as five groups; Eastern, Middle, Northern, Western and Southern Africa (Figure 2.5). From the African category, the

group that is most evident in the majority of the counties in the Atlanta MSA is the foreign-born group from the Western Africa region. They have a large presence in Clayton County, located in city of Atlanta; Douglas County, which is in the suburban area; and Pickens County, which the northern exurban area of Atlanta.

There are counties located in the exurb area with no foreign-born population from Africa. These include Morgan County, Lamar County, Pike County, Meriwether County Haralson County, Heard County, Bartow County, and Dawson County. The foreign-born populations from Eastern Africa are mainly concentrated in DeKalb County, which are in central and suburban areas; Paulding County, located in the exurbs of Atlanta; and Cobb County, located in the suburbs. Foreign-born from the mid-region of Africa choose to locate in the south exurban county of Meriwether in Atlanta MSA. With this analysis, it is inferred that people from the African region of origin are most likely to live in areas that are profoundly connected with the central city areas; however, a small group of this population tends to live in suburban and exurbs areas. This analysis shows similarities to past research, such as that of Conteh (2013), and reinforces the idea that African immigrants prefer to live in diverse neighborhoods.

The foreign-born populations from different regions of Asia are also divided into five groups: Central, Eastern, Southeastern, Western and Southern Asia (Figure 2.5). Asians from these different regions are dispersed throughout the MSA. Foreign-born populations from Southern Asia have large presence in Fayette, Henry, Spalding, Pike and Butts counties, which are located in the southeastern portion of the Atlanta MSA;

however, the same populations also have large amounts in Haralson, Pickens and Forsyth counties, which are located in the exurb area. Asians from the western region of their country are heavily concentrated in southeastern, western, and northeastern parts of Atlanta MSA. Additionally, populations from South Asia and South Eastern Asia are clustered in the central city area of Atlanta and the suburban areas. This study confirms the past findings that Asians tend to live in major metropolitan suburbs (Frey, 2011).

European foreign-born are divided into four categories including Eastern, Northern, Southern and Western Europe. Heard county, which is located in the exurb, has the largest Eastern European foreign-born population, with approximately 50% of the total foreign-born population in that county. Furthermore, (Figure 2.5) demonstrates there are fewer European foreign-born populations in the central city of Atlanta; thus, it confirms the work of Logan et. al (2000) that Europeans do not live in highly integrated counties with other ethnic groups. North America is shown as one group in Figure 2.5 and it shows that this foreign-born population is distributed in higher concentrations in Lamar, Pike and Morgan, but in lower concentrations in Fayette, Henry and Newton. Furthermore, there is a low presence of North American foreign-born populations in northern and central Atlanta MSA counties as well as south suburban area. The North American foreign-born population is most likely to live in exurb and suburban areas, which has a low diversity of ethnicities.

The Central and South American and Caribbean foreign-born populations are illustrated in Figure 2.5 in all the counties across Atlanta MSA. Foreign-born from

Central American have a high concentration throughout the Atlanta MSA. The highest percentage of this group is shown in Carroll, Coweta, Jasper, Spalding, Butts, Barrow, Gwinnett, Bartow, Cherokee, Pickens and Dawson counties. The lowest percentage is shown in Meriwether, Heard, Morgan and Walton counties. Furthermore, the Caribbean foreign-born population is highest in Morgan, Newton and Meriwether counties, while the lowest percentage is in the western and northern MSA in the countries of Carroll, Haralson, Bartow, Cherokee, Pickens Dawson and Forsyth. It is in the exurb areas of the Atlanta MSA where populations of South and Central American are high; there is a lower population of Caribbean, with the exception of Douglas, Newton, and Rockdale counties.

The Australian, New Zealand and Other Oceania populations do not have a large presence in the Atlanta MSA. These groups are hardly visible in Figure 2.5; however, a census tract analysis does indicate a greater presence of Australian foreign-born population in southeastern Forsyth County. Foreign populations from the same region tend to locate in the same counties. This is consistent with the notion that foreign-born populations with similar cultural characteristics choose to live in the same neighborhoods, with similar job pools, shopping at the same grocery stores, and making similar decisions about how to connect between these activities (Handy et al., 2008).

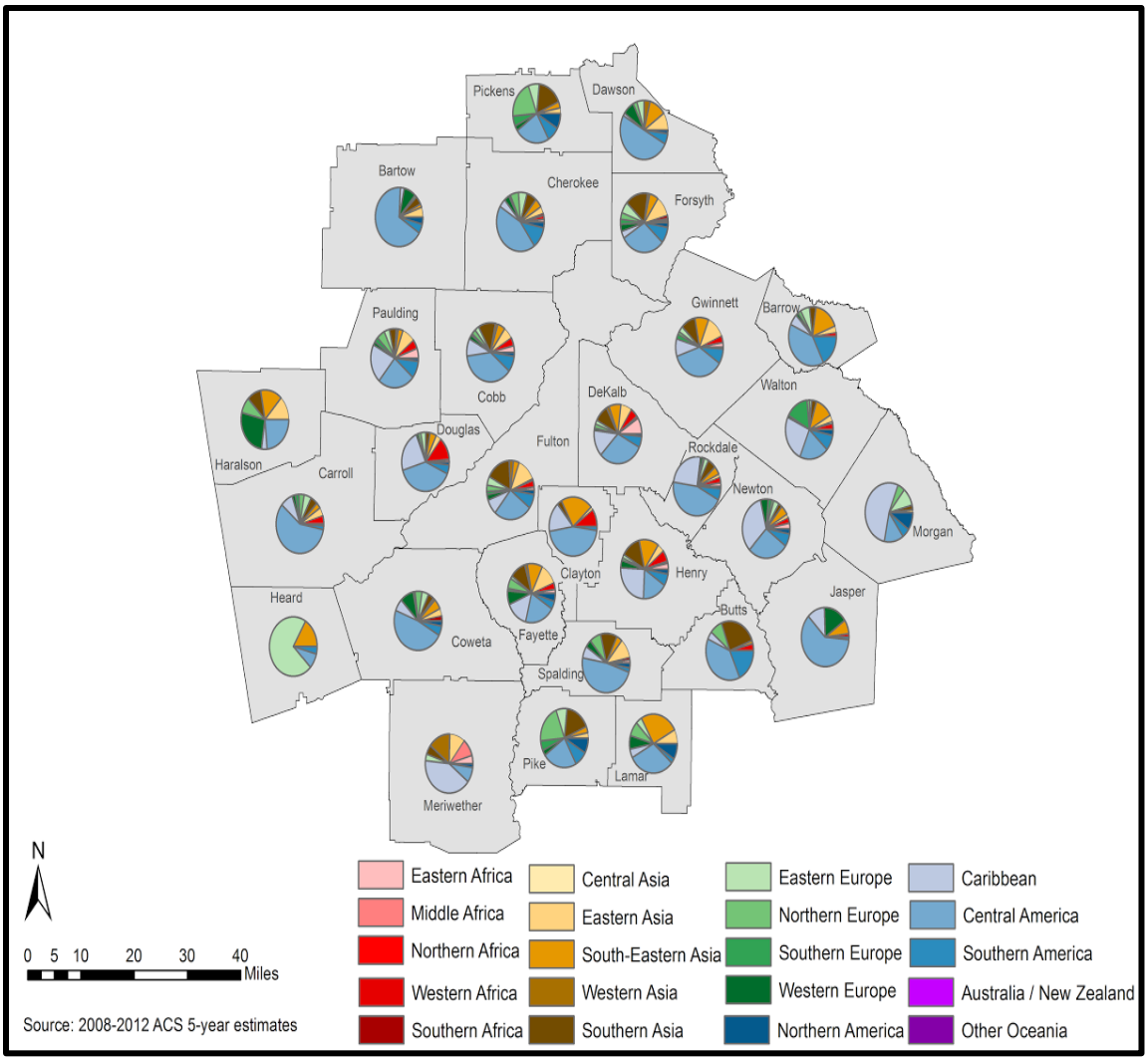

Figure 2.5. Percentage of Foreign-born Populations by Regional Origin in County Level in Atlanta-Sandy Spring-Roswell Metropolitan Area, 2013. Source: U.S. Bureau of the Census, American Community Survey, 2008-2012.

2.4.4 Highest and Lowest Census Tracts of Foreign-born Population by Region of Origin in the Atlanta MSA

This part of the analysis is performed to show the clustering and concentration of foreign-born populations within census tracts. First, Tracts with highest foreign-born

populations, the result in Table 2.1 shows the top 20 census tracts with highest foreign-born populations by region of origin. The tracts with highest foreign-born populations are in three counties of the Atlanta MSA: Gwinnett (13089022008), DeKalb (13135050434), and Fulton (13121011420). All these census tracts are in the urban areas of Atlanta MSA. The census tract with highest foreign-born population is in DeKalb County, where South East Asian immigrants make up 34% of the total foreign-born population. The census tract with the second highest foreign-born populations is in Gwinnett County with 4637 foreign-born populations. The tract with the third highest foreign-born population is in Fulton County with Central American foreign-born populations equaling 3354 out of 3932 foreign-born populations. These census tracts are converted into ethnic enclaves, where most newcomers are welcome.

Second, tracts with lowest foreign-born populations the analysis in Table 2.2 shows the tracts with the lowest foreign-born population by region of origin; Meriwether County has a tract (13199970700) of 2 foreign-born people from Central America; therefore, they are about 0.02 % from total population in the tract. Then, there are 4 foreign-born people from Southeast Asia within a Fulton County census tract (13121008602) who make up about 0.02% of the total population of that tract, and 4 foreign-born people from South America within a Heard census tract (13149970100), which makes up approximately 0.08% of that tract's total population.

Third, tracts with zero foreign-born population the result in Table 2.3 shows that there are some tracts with zero foreign-born population. Meriwether has the highest

number of tracts with no foreign-born population, and only one tract has 2 people from Central American who are foreign-born live in this county with native-born 8184. Even though Fulton County has foreign-born population, 4 census tracts in the county (3% of the tracts) do not have any foreign-born population. These tracts are in suburban areas of Fulton County. This analysis validates the idea that native-born Americans in the U.S. are less likely live in neighborhoods that have foreign-born populations (Logan et al., 2000).

Table 2.1 Top 20 Census Tracts with Highest Foreign-born Population by Regional Origin

COUNTYFP	County	GEOID	EAfrica	MidAfrica	NAfrica	WAfrica	SAfrica	CAsia	EAsia	SE_Asia	SAsia	WAsia	EEurope	NEurope	SEurope	WEurope	Caribbear	CAmerica	SAmerica	NorAmeri	Aus_NZ	OthOcean	Total_Fore	Tot_Pop
089	Dekalb	13089021303	32	0	0	45	0	0	248	335	181	0	0	6	0	0	80	2103	247	0	0	0	3351	5962
089	Dekalb	13089022008	1196	224	171	224	0	34	38	1810	495	18	0	13	242	0	113	73	0	0	0	0	5366	7847
121	Fulton	13121011420	37	0	0	0	0	0	0	27	86	0	149	0	43	0	219	3354	81	21	0	0	3992	7682
121	Fulton	13121011614	207	0	0	219	65	0	197	210	1279	0	313	111	56	0	177	148	467	108	12	0	3808	13517
121	Fulton	13121011622	0	0	0	0	0	0	1332	64	1301	94	125	54	0	0	135	35	24	14	78	95	3346	10003
121	Fulton	13121011623	0	0	17	0	43	0	1698	237	956	68	5	44	207	0	36	29	92	101	0	0	3890	12400
135	Gwinnett	13135050213	13	75	0	0	0	0	1737	69	446	25	0	63	10	0	194	470	87	15	0	0	3276	12184
135	Gwinnett	13135050216	0	0	0	0	0	0	2480	270	222	10	144	0	0	0	0	103	0	14	0	0	3172	8361
135	Gwinnett	13135050314	30	0	0	0	0	0	755	191	88	16	49	11	0	0	200	1944	199	0	0	0	3575	9781
135	Gwinnett	13135050418	47	32	0	56	0	0	110	341	85	12	104	15	47	0	155	2432	44	0	0	0	3397	7028
135	Gwinnett	13135050419	97	0	11	79	0	0	194	442	214	10	26	19	11	0	243	2883	96	17	0	0	4325	8119
135	Gwinnett	13135050421	0	0	0	108	0	0	158	562	44	0	10	0	0	0	201	1852	250	0	0	0	3239	7904
135	Gwinnett	13135050422	21	0	58	0	0	0	106	367	307	0	0	0	32	0	144	2914	219	0	0	0	4199	8040
135	Gwinnett	13135050434	35	0	0	0	0	61	262	340	280	76	0	0	62	0	91	3323	20	0	0	0	4637	6977
135	Gwinnett	13135050511	37	0	0	188	0	0	534	365	396	15	33	0	0	0	269	850	448	0	0	0	3458	10364
135	Gwinnett	13135050533	13	0	0	66	0	0	85	1012	277	21	0	12	0	0	122	901	527	0	0	0	3178	7936
135	Gwinnett	13135050544	28	0	41	86	0	0	456	849	506	12	28	91	38	0	378	490	178	15	0	0	3470	11790
135	Gwinnett	13135050545	15	0	0	581	11	0	0	45	119	0	153	27	367	0	376	1118	579	154	0	0	3880	11238
135	Gwinnett	13135050546	28	0	0	385	33	0	134	106	160	23	316	0	174	0	893	1569	265	0	0	16	4341	15650
135	Gwinnett	13135050606	14	0	103	41	0	10	644	472	244	25	0	12	635	0	564	738	403	351	9	0	4560	20746

Note. Table 2.1 calculated based on U.S. Bureau of the Census, American Community Survey, 2008-2012 data.

Table 2.2 Top 20 Census Tracts with Lowest Foreign-born Population by Region of Origin

COUNTYFI	County	GEOID	EAfrica	MidAfrica	NAfrica	WAfrica	SAfrica	CAsia	Easia	SE_Asia	SAsia	WAsia	EEurope	NEurope	SEurope	WEurope	Caribbean	CAmerica	SAmerica	NorAmerica	Aus_NZ	OthOcean	Total_Fore	Tot_Pop
089	Dekalb	13089020801	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	8	2448
121	Fulton	13121007604	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	12	2235
121	Fulton	13121008500	0	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	4102
121	Fulton	13121002600	0	0	0	6	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	12	802
121	Fulton	13121005502	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0	0	0	0	14	2461
121	Fulton	13121006300	0	0	0	0	0	0	0	0	0	0	0	7	0	0	12	0	0	0	0	0	19	1559
121	Fulton	13121005700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	12	1357
121	Fulton	13121008602	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4	1717
121	Fulton	13121002300	0	0	0	0	0	0	11	0	0	0	0	5	0	0	0	0	0	0	0	0	16	1141
121	Fulton	13121006601	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	5	0	12	1799
121	Fulton	13121006200	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1182
121	Fulton	13121008202	0	0	0	8	0	0	0	0	0	0	0	0	0	0	6	0	0	1	0	0	15	2354
121	Fulton	13121008700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	6	5	0	0	0	19	4787
121	Fulton	13121004100	5	0	0	0	0	0	5	0	0	0	0	0	0	0	9	0	0	0	0	0	14	1708
121	Fulton	13121008302	0	0	0	0	0	0	4	0	0	0	4	0	0	0	11	0	0	0	0	0	19	2193
149	Heard	13149970100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	4473
159	Jasper	13159010200	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	6	0	0	0	15	2896
199	Meriweth	13199970700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	8184
211	Morgan	13211010200	0	0	0	0	0	0	5	0	9	0	0	0	0	0	0	0	0	0	0	0	14	3592
223	Paulding	13223120104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6	2226

Note. Table 2.2. Calculated based on U.S. Bureau of the Census, American Community Survey, 2008-2012 data

Table 2.3 10 Census Tracts with Zero Foreign-born Population by County

County FP	Geo ID	County	Total Population	FB Population
121	13121006602	Fulton	896	0
121	13121008101	Fulton	1201	0
121	13121003900	Fulton	1460	0
211	13211010500	Morgan	1483	0
149	13149970300	Heard	3071	0
231	13231010200	Pike	3237	0

Table 2.3 Cont.

County FP	Geo ID	County	Total Population	FB Population
045	13045910400	Carroll	3408	0
143	13143010100	Haralson	3972	0
121	13121008601	Fulton	4721	0
199	13199970500	Meriwether	5351	0

Note. Source: U.S. Bureau of the Census, American Community Survey, 2008-2012.

2.4.5 Distribution of Foreign-born Populations from Developed and Non-developed Countries in the Atlanta MSA

In this analysis, as seen in Table 2.4, I discuss the distribution patterns of foreign-born populations from developed and non-developed countries in the Atlanta MSA. For doing so, I divided foreign-born populations into two groups (developed vs non-developed country of origin) based on the United Nations division of Country classifications 2013. Foreign-born populations from non-developed countries represent about 93% of the total foreign-born population in the Atlanta MSA. Foreign-born populations from developed countries show more dispersion throughout the city, urban and exurban areas. The majority of immigrants from non-developed countries are living in suburban areas. The second clustering of foreign-born populations from non-developed countries is found in the exurb areas of the MSA. The lowest clustering of foreign-born populations from non-developed countries are found inside the city of Atlanta.

Table 2.4 Number of Foreign-born Population from Developed and Non-developed Countries in the Atlanta MSA in Urbanized Areas

Area	Total Foreign-born from Non-Developed Countries	Total Foreign-born from Developed Countries	Total Foreign-born
City	28,357	5,021	33,378
Urban	594,958	42,050	637,008
Exurb	44,508	6,070	50,578
Total	667,823	53,141	720,964

Note. Source: U.S. Bureau of the Census, American Community Survey, 2008-2012.

The results in Figures 2.6 and 2.7 illustrate the distributions of foreign-born population from developed countries and non-developed countries to understand the clustering of foreign-born populations in the Atlanta MSA. The tracts with the highest percentage of foreign-born population from developed countries are more scattered throughout the MSA. This pattern implies that foreign-born populations from developed countries can live anywhere. In contrast, the tracts with the highest percentage of foreign-born populations from non-developed countries can be seen mostly within Gwinnett County (Figure 2.7). These tracts are located along Interstate Highway 985 in Gwinnett County and have more than 40 % of total foreign-born population from non-developed countries in the Atlanta MSA. The other tracts with similar results include southeast Cobb County and two tracts in north Clayton County. The distribution of foreign-born population from non-developed countries decreases in the west and south regions of Atlanta, as we move towards the suburban area and outskirts. The distribution patterns of foreign-born population from non-developed countries in the Atlanta MSA is consistent

with Liu and Painter's (2012) findings that the development of interstate highways in suburban areas reduces the time of transportation and cost of mobility, which enables easy access to workplaces and residences in suburban areas for foreign born populations.

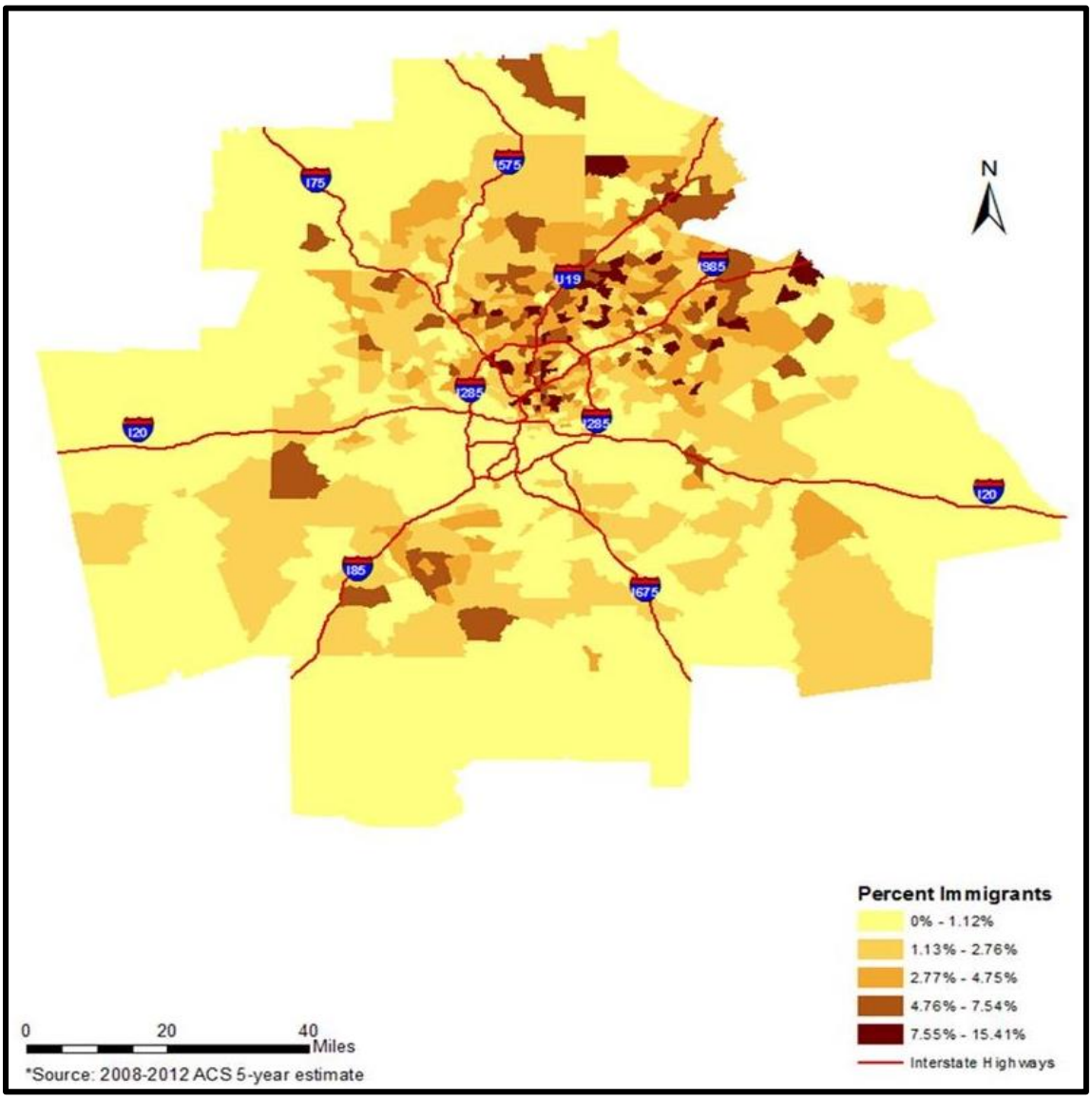

Figure 2.6. Percentage of Foreign-born Population from Developed Countries by Census Tract in Atlanta-Sandy Spring-Roswell Metropolitan Area, 2013. Source: U.S. Bureau of the Census, American Community Survey, 2008-2012.

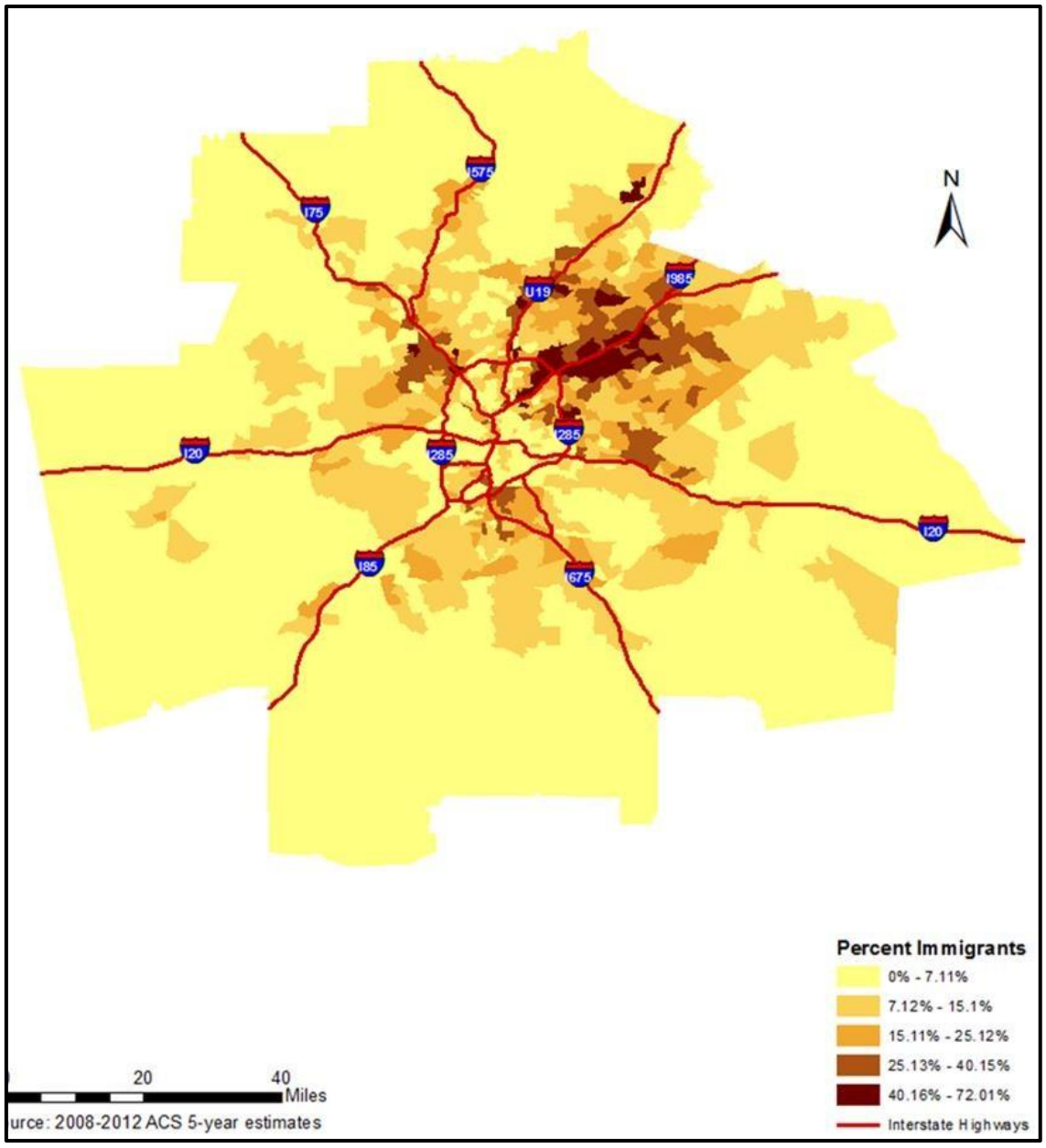

Figure 2.7. Percentage of Foreign-born Population from Non-developed Countries in Atlanta-Sandy Spring-Roswell Metropolitan Area by Census Tract, 2013. Source: U.S. Bureau of the Census, American Community Survey, 2008-2012.

2.4.6 Distribution of Foreign-born Population from Western and Non-Western Countries in the Atlanta MSA

In this section, I have examined the distribution of foreign-born populations from Western and non-Western countries of origin to evaluate whether immigrants in the Atlanta MSA cluster based on their culture of origin (Table 2.5). The foreign-born populations from Western countries and areas include North America, North Europe, Western Europe, and South Europe. The foreign-born populations originating from non-Western countries include East Europe, Europe NEC, East Asia, South Central Asia, South East Asia, West Asia, Asia NEC, East Africa, Mid Africa, North Africa, South Africa, West Africa, Africa NEC, Australia and New Zealand, Fiji, Oceania, and Latin America. The distribution of populations from western countries and non-western countries depend on geographic division. The analysis done by taking Japanese and Australians from the list of developing counties. The result shows that there is no change of the patterns of distribution from developed and non-developed countries, because the number of foreign-born populations from these two countries is small group of people, and they not influence the distribution to be different from the past categories.

The result in Table 2.5 shows that immigrants from non-Western countries are mainly living in urban areas, making up 94% of the total foreign-born population within urban areas and 83% of total foreign-born population in the Atlanta MSA. Foreign-born population from non-Western countries, which includes (all countries from the world except Western Europe and North America), make up 93.5% of total foreign-born population in all of the MSA. The results show that foreign-born populations from

Western nations are also concentrated in urban areas. They make up 6.5% of the total foreign-born from Western nations, 6% of the total foreign-born population within the urban area and 5% of the total foreign-born in Atlanta MSA. Table 2.5 confirms that foreign-born populations from developed and western countries are living within urban areas, especially within the city of Atlanta.

Table 2.5 Number of Foreign-born Population from Western and Non-Western Countries in Atlanta MSA in Urbanized Area

Area	Total Foreign-born from Non-Western Countries	Total Foreign-born from Western Countries	Total Foreign-born
City	29,057	4,321	33,378
Urban	599,851	37,157	637,008
Exurbs	44,836	5,742	50,578
Total	673,744	47,220	720,964

Note. Source: U.S. Bureau of the Census, American Community Survey, 2008-2012.

The results of Figure 2.8 show a dense concentration of foreign-born population from Western countries in the northeastern section of the Atlanta MSA, which is similar to the results of Figure 2.6. Furthermore, examining the percentage of foreign-born populations from Western countries at the census tract level shows that there are 4 tracts in southeast Gwinnett County that have approximately 5-12 % of foreign-born population from Western countries. Within North Fulton County and Forsyth County, the Western countries population distribution is seen throughout the area as being dispersed. It can be concluded from Figure 2.8 that populations from Western countries prefer to live within

city boundaries as well as suburbs. In contrast, the percentage of concentration of foreign-born population from non-Western countries (Figure 2.9) shows similar patterns to foreign-born populations from non-developed countries (Figure 2.7).

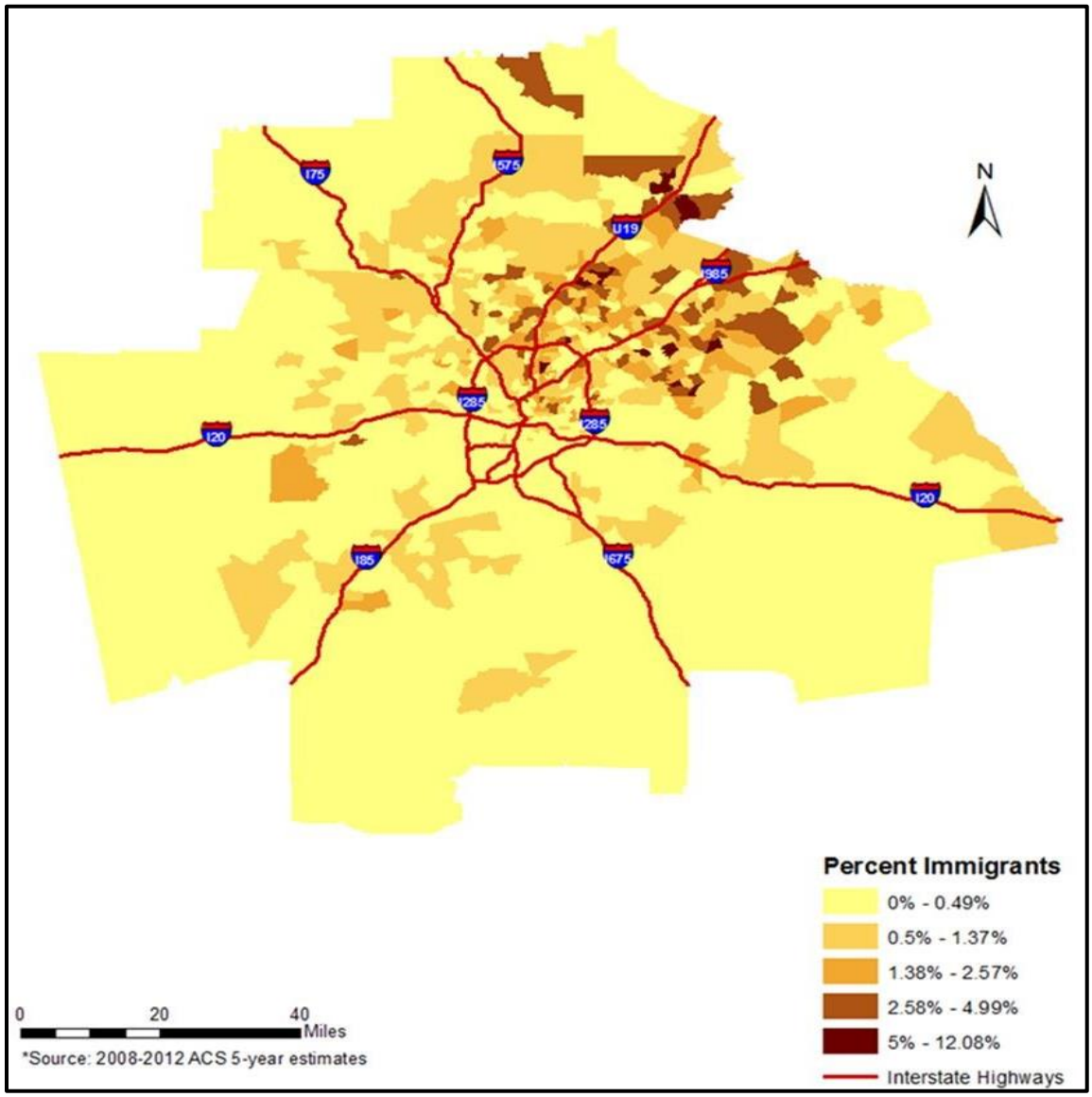

Figure 2.8. Percentage of Foreign-born Population from Western Countries in Atlanta-Sandy Spring-Roswell Metropolitan Area by Census Tracts, 2013. Source: U.S. Bureau of the Census, American Community Survey, 2008-2012.

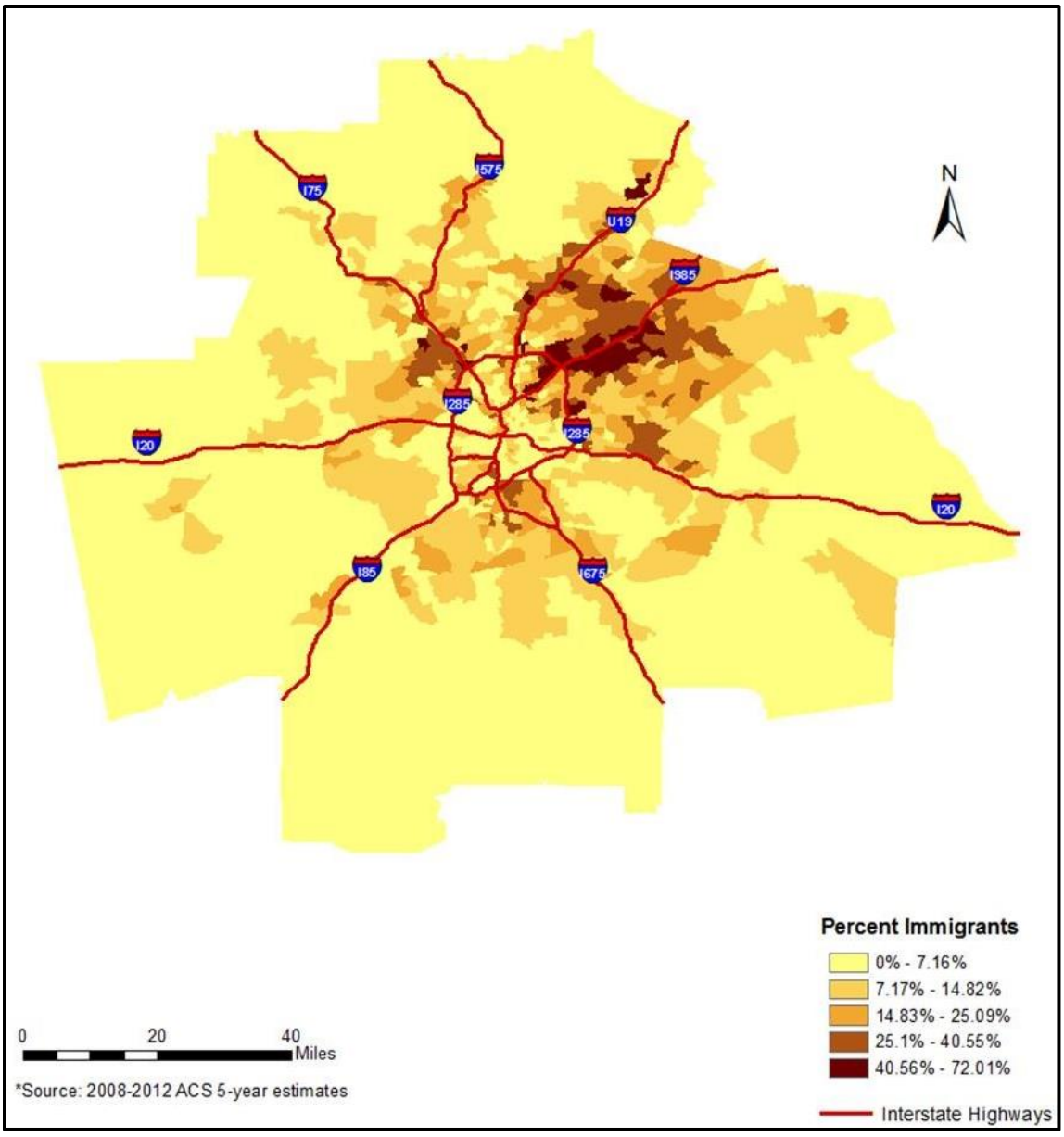

Figure 2.9. Percentage of Foreign-born Population from Non-Western Countries in Atlanta-Sandy Spring-Roswell Metropolitan Area by Census Tract, 2013. Source: U.S. Bureau of the Census, American Community Survey, 2008-2012.

2.4.7 Association between Foreign-born Population Clusters and Jobs, Education, and English Proficiency

Correlation coefficient analyses were used to assess the statistical significance of the relationship between the distribution of foreign-born population with local job opportunities, level of education and with their proficiency in English (Table 2.6). Among local jobs, farming, transportation and public administration seemed to have the weakest and non-significant relationship with total foreign-born population distribution. A positive correlation exists (r=.206 to r=.248) with construction, retail trade and other service jobs. Table 6 also shows that for African populations, no significant relationship exists between the distribution of population from East, Mid- and North Africa and local jobs. A weak but significant positive relationship exists between immigrants from South Africa and professional and information jobs (r=.163, r=.138). No significant relationship appears between the distribution of immigrants from Central Asia and the different local jobs. A weak significant positive relationship, however, exists between the distribution of population from East, South and South East and West Asia and jobs related to construction, wholesale trade, information, finance, profession and art jobs (r=.086, r=.152, r=.135, r=.220, r=.207) with p<.001. The distribution of European populations appears to be significantly related to wholesale trade, retail sale, information, finance, and education health (r=.085 to r=.176) and (p<.001). For immigrants of Caribbean origin, the distribution of the population is shown to be significantly related to retail trade, transportation, education health and art jobs though relationships are weak (r=.097 to r=.202; p<.001).

Construction jobs seem to have the strongest relationship with the distribution of immigrants who originated from Central America as well as South America (r=.226, r=.131, respectively). This group of immigrants also has significant positive relationships with other job categories such as wholesale trade, retail trade, education health, arts and other services, which are attractive for unskilled workers (Sultana and Miller, 2006) and rejected by well-educated workers. For immigrants from North America, the distribution of the population is related to information, finance, profession and health education jobs (r=.124, r=.102, r=.137 and r=.086, respectively). No significant relationship exists between the distribution of population that originated from Australia, New Zealand and other Oceanian and local jobs; perhaps this is because of their smaller representation in the Atlanta MSA (Table 2.6).

The Spanish language is also dominant among languages other than English spoken at home in the U.S. Language spoken by foreign-born populations is shown to be highly correlated with the distribution of total foreign-born population. There is a moderate positive relationship with populations speaking only English (r= .503) and a strong positive relationship with populations speaking Spanish (r=.763) with p<.001. For the population originating from Africa (particularly East Africa), there is a significant positive relationship with people who speak another language (r=.876) and p<.001, while there is a moderate relationship between the distribution of Mid- North and West Africa population and other spoken languages (r=.318, r=.458, r=.447) at p<.001 significant level. Asian languages were shown to be highly correlated with the distribution of

populations originating from East, South East and South Asia. This confirms that immigrants do not select destinations randomly; rather they move to places where there is an existing social network such as settling near friends or relatives (Sultana, 2002). In addition, the Euro language was strongly related to the distribution of population from South Asia. For European origin populations, a weak to moderate positive relationship exists between the distribution of the population and only English, Spanish, Indo-Euro, Asian and other languages (r=.140 to r=.414) at p<.001. For Caribbean populations, the English language is shown to be the most strongly related language to the distribution of this population (r=.722) at p<.001. The Spanish language is very strongly related to the distribution of population that originated from Central America (r=.982) at p<.001, whereas, the four language categories are shown to have a weak to moderate positive relationship with the distribution of the population originating from South Asia. Moreover, no significant relationship between Spanish and other languages and the distribution of the population originating from North America, Australia-New Zealand and other Oceanian was shown.

Education is shown to be strongly related to the distribution of total foreign-born population, with high school levels having the strongest positive relationship (r=.862), followed by less than high school (r=.783) levels, then some college degree experience (r=781). Graduate degrees are shown to have a moderate positive relationship (r=.517) at p<.001. All five levels of education are shown to have weak to moderate positive relationships with African populations, while bachelor and graduate level education was

shown to be strongly related to the distribution of populations originating from East and South Asia (r=.736, r=.778) at p<.001. For Central America populations, less than high school and high school levels of education were shown to have a very strong relationship with the distribution of this population (r=.904, r=.702) at p<.001. For South American populations, some college and bachelor level education have a moderate positive relationship with the distribution of this population (r=.560, r=.476) at p<.001 (Table 2.6). Most Hispanic population is overrepresented in primary sector activities that do not look for professional or highly educated people (Sultana and Weber, 2013).

No significant relationship appeared to be related to the distribution of North America, Australia-New Zealand and other Oceanian population and less than high school or high school level education, whereas there is a weak positive relationship with the other levels of education at p<.001. The limited set of housing options for those who have low economic level and hence, they may be willing to accept living in substandard quality homes or in problematic neighborhoods (Hall, 2013). Household income, which amounts to thousands of dollars, and homeownership are both assumed indicators of socioeconomic competition to push people to live in specific areas, and this is supposed to be negatively associated with living in an ethnic enclave (Logan et al., 2000). The results of this analysis show that in the beginning of settlement, most immigrants are more likely looking for low skilled jobs, and this can be seen in suburban areas such as service firms and retailers, which will increase over time by opening new institutions depending on population requests.

Table 2.6 Correlation of Foreign-born Populations and Jobs, Immigrant Education, and English Proficiency

Industry	Total FB	Total NB	E Africa	Mid Africa	N Africa	W Africa	S Africa	C Asia	E Asia	SE Asia	S Asia	W Asia	E Europe	N Europe	S Europe	W Europe	Caribbean	C America	S America	N America	Aus_NZ	Other Oceanian	Totl_Dev	Total_Nor	Total Wes	Total-NonWestern
Farming	-0.012	0.093**	-0.05	-0.036	-0.035	-0.025	0.074*	0.004	-0.014	-0.007	0.035	-0.029	0.047	-0.013	-0.057	-0.024	-0.03	0.02	-0.042	0.023	0.075*	0.007	0.093**	0.065*	0.065*	0.065*
Construction	0.206**	0.189**	-0.038	0.035	-0.043	0.068*	-0.036	0.014	0.085**	0.095**	0.068*	-0.005	0.078*	0.019	-0.003	0.023	0.033	0.226**	0.131**	0.047	0.01	0.019	0.012	0.021	0.021	0.015
Manufacturing	0.103**	0.304**	-0.03	-0.004	-0.023	0.008	0.014	0.006	0.044	0.093**	0.119**	0.041	0.06	0.062	0.033	0.028	-0.004	0.054	0.098**	0.069**	-0.024	0.013	0.076*	-0.001	-0.001	0
Wholesale Trade	0.180**	0.192**	-0.02	-0.015	0.021	0.070**	0.065*	0.002	0.088**	0.094**	0.190**	0.085**	0.166**	0.077*	0.072*	0.094**	0.044	0.096**	0.160**	0.053	-0.014	0.018	0.733**	0.044	0.731**	0.042**
Retail Trade	0.206**	0.319**	0.008	0.004	0.071*	0.090**	-0.001	0.086**	0.072*	0.129**	0.156**	0.041	0.072*	0.113**	0.118**	0.069*	0.122**	0.089**	0.217**	0.150**	-0.017	0.015	0.732**	0.012	0.730**	0.012
Transportation	0.025	0.231**	-0.03	0.027	0.065*	0.183**	-0.064	0.036	-0.069	0.063	-0.032	-0.059	-0.063	-0.056	0.008	-0.029	0.202**	-0.016	0.071*	-0.028	-0.078	-0.021	0.732**	-0.017	0.729**	-0.02
Information	0.127**	0.127**	-0.001	-0.013	0.054	0.029	0.138**	0.061	0.084**	0.086	0.152**	0.119**	0.090**	0.151**	0.057	0.102*	0.028	0.021	0.13**	0.124**	0.01	-0.014	0.732**	-0.014	0.729**	-0.01
Finance	0.163**	0.172**	-0.016	0.021	0.039	0.054	0.084**	0.049	0.097**	0.064*	0.135**	0.107**	0.127**	0.148**	0.087**	0.124**	0.025	0.072*	0.163**	0.102**	0.005	0.039	0.732**	-0.018	0.730**	-0.016
Profession	0.199**	0.149**	0.011	-0.006	0.037	0.047	0.163**	0.021	0.110**	0.06	0.220**	0.126**	0.108**	0.176**	0.094	0.134**	0.016	0.094**	0.162**	0.137**	0.033	0.028	0.732**	-0.017	0.730**	-0.015
Education Health	0.151**	0.315**	0.037	0.008	0.085**	0.104**	0.028	0.029	0.03	0.105**	0.119**	0.059	0.034	0.052	0.119**	0.101**	0.164**	0.032	0.168**	0.086**	-0.044	0.028	0.732**	0.018	0.730**	0.018
Arts	0.195**	0.220**	-0.025	0.066**	0.009	0.05	0.037	0.034	0.084**	0.085**	0.147**	0.074*	0.074*	0.109**	0.072*	0.073*	0.097**	0.119**	0.139**	0.110**	0.04	0.079*	0.732**	0.016	0.730**	0.015
Other Service	0.248**	0.224	0.053	0.009	0.068*	0.110**	0.018	0.009	0.102**	0.207**	0.167**	0.073*	0.134**	0.069*	0.078*	0.114**	0.120*	0.129**	0.193**	0.075*	0.009	0.070*	0.732**	0.018	0.73**	0.014
Public administration	0.02	0.254**	0.017	0.009	0.062	0.094**	-0.058	-0.006	-0.065	0.066	0.039	-0.022	-0.067	-0.042	0.019	0.019	0.2	-0.044	0.021	-0.015	-0.069	0.005	0.732**	0.008	0.730**	0.007
other Jobs	0.215**	0.305**	0.018	0.02	0.070**	0.101**	0.074*	0.032	0.079*	0.120**	0.189**	0.098**	0.086**	0.120**	0.097**	0.131**	0.137**	0.089*	0.194**	0.119**	-0.008	0.05	0.732**	0.005	0.730**	0.005

Language Spoken	Total FB	Total NB	E Africa	Mid Africa	N Africa	W Africa	S Africa	C Asia	E Asia	SE Asia	S Asia	W Asia	E Europe	N Europe	S Europe	W Europe	Caribbean	C America	S America	N America	Aus_NZ	Other Oceanian	Totl_Dev	Total_Nor	Total Wes	Total-NonWestern
Only English	0.503**	0.935**	0.135**	0.104**	0.104**	0.405**	0.106**	0.035	0.262**	0.212**	0.284**	0.137**	0.140**	0.349**	0.268**	0.221**	0.722**	0.087**	0.422**	0.397**	0.139**	0.087**	0.481**	0.473**	0.475**	0.473**
Spanish	0.763**	0.250**	0.069*	0.04	0.005	0.196**	-0.024	0.016	0.102**	0.3**	0.135**	0.057	0.145**	0	0.148**	0.009	0.178**	0.982**	0.354**	0.02	-0.043	0.004	0.019	0.782**	0.778**	0.02
Indo-Euro	0.689**	0.360**	0.254**	0.185**	0.212**	0.323**	0.211**	0.184**	0.359**	0.362**	0.722**	0.319**	0.249**	0.269**	0.414**	0.337**	0.343**	0.185**	0.473**	0.283**	0.170**	0.150**	0.448**	0.668**	0.671**	0.416**
Asian	0.670**	0.138**	0.184**	0.142**	0.176**	0.083**	0.098**	0.051	0.844**	0.607**	0.627**	0.317**	0.160**	0.227**	0.191**	0.172**	0.102**	0.166**	0.282**	0.242**	0.217**	0.171**	0.385**	0.653**	0.659**	0.313**
Other	0.426**	0.123**	0.876**	0.318**	0.485**	0.447**	0.05	0.068*	0.047	0.445**	0.184**	0.298**	0.082	0.013	0.201*	-0.016	0.224**	0.096**	0.121**	0.027	-0.015	0.007	0.021	0.486**	0.484**	0.019

Education	Total FB	Total NB	E Africa	Mid Africa	N Africa	W Africa	S Africa	C Asia	E Asia	SE Asia	S Asia	W Asia	E Europe	N Europe	S Europe	W Europe	Caribbean	C America	S America	N America	Aus_NZ	Other Oceanian	Totl_Dev	Total_Nor	Total Wes	Total-NonWestern
Less HS	0.783**	-0.016	0.261**	0.155**	0.108**	0.221**	-0.036	0.048	0.095**	0.486**	0.164**	0.078*	0.112**	-0.021	0.139**	-0.027	0.211**	0.904**	0.264**	0	-0.041	0.012	-0.022	0.806**	0.802**	-0.016
High School	0.862**	0.135**	0.303**	0.149**	0.158**	0.357**	0.021	0.03	0.297**	0.561**	0.287**	0.156**	0.190**	0.075*	0.301**	0.076*	0.430**	0.702**	0.482**	0.153**	0.04	0.018	0.162**	0.871**	0.869**	0.153**
Some College	0.781**	0.221**	0.301**	0.147**	0.172**	0.427**	0.091**	0.058	0.413**	0.459**	0.398**	0.194**	0.220**	0.275**	0.378**	0.188**	0.575**	0.370**	0.560**	0.255**	0.057	0.123**	0.370**	0.768**	0.769**	0.355**
Bachelor	0.684**	0.155**	0.141**	0.088**	0.167**	0.285**	0.180**	0.106**	0.682**	0.325**	0.736**	0.366**	0.253**	0.346**	0.223**	0.302**	0.263**	0.145**	0.476**	0.323**	0.197**	0.163**	0.525**	0.655**	0.662**	0.458**
Graduate	0.517**	0.068*	0.068*	0.061	0.149**	0.111**	0.254**	0.102**	0.582**	0.172**	0.778**	0.421**	0.208**	0.375**	0.150**	0.312**	0.106**	0.033	0.322**	0.348**	0.279**	0.233**	0.568**	0.480**	0.488**	0.495**

Note. Source: Table 2.6 calculated based on US census 2013.

*Correlation is significant at the 0.01 level (2-tailed).

**Correlation is significant at the 0.05 level (2-tailed).

No significant relationship	0.0
Significant at .05	0.05
Significant at .01	0.01

2.5 Conclusions

This study seeks to add to the growing body of literature related to the geographic distribution of immigrant population trends at the micro scale within the Atlanta MSA.

The results of this study suggest that the geographic distributions of foreign-born population have different patterns depending on their country and region of origin. This analysis reveals that while foreign-born population from non-developed countries are distributed in all areas of the MSA with the exception of a few census tracts; their distributions are highly clustered in specific tracts, located in urban areas. These tracts are in the three counties: Gwinnett County, DeKalb County, Fulton County, which are mostly located in the urban area of Atlanta MSA, and near to interstate highways. Tracts within highly ethnic neighborhoods that share the same culture and which concentrate in an area represent all level of incomes and jobs. This analysis also finds many census tracts without foreign-born populations in Atlanta MSA and the northern part Fulton County has the highest numbers of these census tracts. Given the northern part of Fulton County is part of Atlanta city and the Atlanta suburban area, these are the most expensive areas in the entire metropolitan area and are frequently chosen by native-born population. These areas also attract a significant percentage of foreign-born populations from developed and Western countries of origin.

The correlation coefficient of foreign-born population with jobs, immigrant education, and proficiency of English shows alarming differences of relationships among different immigrant groups. Local jobs, farming, transportation and public administration seemed to have the weakest and non-significant relationship with total foreign-born population distribution, whereas a positive correlation exists with construction, retail trade and other service jobs. The construction jobs seem to have the highest relationship

with the distribution of immigrants who originated from Central America as well as South America (r=.226, r=.131, respectively). Language spoken by foreign-born population was shown to be highly correlated with the distribution of total foreign-born population. Education was shown to be strongly related to the distribution of total foreign-born population as well. While bachelor and graduate degree levels were shown to be strongly related to the distribution of population that originated from East and South Asia, less than high school and high school levels of education were shown to have a very strong relationship with the distribution of foreign-born populations from Central America.

CHAPTER III

ASSESSMENT OF SEGREGATION AMONG IMMIGRANT GROUPS ACROSS THE ATLANTA METROPOLITAN STATISTICAL AREA: MELTING POT OR SALAD BOWL?[2]

3.1 Introduction

This study empirically analyzes the magnitude of segregation among immigrant populations in the Atlanta metropolitan area. Residential segregation among different races and ethnic groups has been a defining characteristic of U.S. cities for nearly a century and has played a prominent role in driving and maintaining racial and ethnic inequality (Massey et al., 2008). Though it is unlikely that racial-ethnic segregation will disappear soon from American urban areas, the magnitude of segregation has declined over the last three decades (Frey, 2015). A study done for Project U.S. 2010 showed that with a majority (60%) of metro area residents located in suburban rings, central cities have not grown as much suburbs (Logan, 2014). A suburban ring consists of suburbs inside the metropolitan area but outside the city core. This study also shows how there are a variety of racial and ethnic groups, with non-Hispanic Whites likely preferring to live in the suburbs. Other ethnic groups have been catching up; a surprising result is that

[2] Altaher, Arwa. 2017. To be resubmitted to *Urban Geography.*

suburban areas in 2010 have about the same degree of racial and ethnic diversity that cities did in 1980 (Logan, 2014).

Though America's suburbs are now as diverse as large central cities were 30 years ago, these suburbs are also experiencing the similar cycle of racial segregation and inequality that has haunted central cities for decades (Logan, 2014). The residential segregation of immigrants partly reflects the fact that immigrants' characteristics differ from those of the native-born population (Logan, 2014). Each group of immigrants has socioeconomic characteristics such as income, profession, level of education, and proficiency in English language, and these attributes affect immigrants' employment positions and tend to play a role in economic status and housing choices (Pan Ke´ Shon, 2015). The accessibility of housing and jobs to immigrants within urban agglomerations has been shown to influence the concentration of immigrants as well (Bonnal et al., 2012; Verdugo, 2012).

Since segregation practices in American housing markets influence immigrants' quality of life, socioeconomic status, and housing choices, it is critical to analyze the residential segregation patterns of immigrants from different groups. Comparing foreign-born populations by region and continent of origin is a way to view the contrasts between immigrant groups to see which groups are faring better in housing choices. Our knowledge of segregation comes from a focus on ethnicity segregation between black and white as two main parts of American population groups; however, immigrants' segregation patterns are still understudied. A handful of literature has focused on

segregation issues of immigrants based on large cities in the Midwest, East and West Coast such as Chicago, New York, Los Angeles and San Francisco; very few are based on Southern cities (Huang and Liu, 2016). Therefore, I extend the segregation literature by documenting the magnitude of the segregation index among immigrant groups based on their continent of origin, region, and socioeconomic status of country for an area that has been neglected in the literature: a Southern MSA and in this case Atlanta particularly.

3.2 Prior Research on Residential Segregation

Population segregation in the U.S. started in the beginning of the twentieth century (Perez and Hirschman, 2009) and has become one of the push factors of population distribution, especially in the U.S. since 1905 (Wilson, 2011). Beginning in the 1930s, federal regulations disfavored both the extension of mortgage credit to homeowners in mixed-race neighborhoods and integration in some areas (Glaeser and Jacob, 2012). In part because of these policies, segregation rose dramatically with Black migration to cities such as Chicago, Detroit, Cleveland, New York, and Philadelphia in the mid-twentieth century (Vigdor, 2012; Massey, 2009). While Black migrants found various opportunities for them to find a job in the big cities, they were only allowed to live in certain ghetto housing and neighborhoods (Fery, 2014; Glaeser 2012). Though the Supreme Court ruled these policies unenforceable in 1948, the damage was done (Massey, 2008). Government policy in the U.S. began acting on the phenomenon of racial segregation with events such as the Civil Rights Movement in the 1960s when segregation became an issue of public opinion. The debate reached a peak at that time.

The media sources from that time mention that the U.S. had experienced a decline of segregation when comparing cities between the Souths to those in the Norths, which were more integrated than they had been since 1910.

Most academic studies in last half-century focused on ethnicity segregation between Blacks and Whites as two main parts of American population groups and found segregation was declining in most major cities, but was still noticeable (Massey, 2009). Since 2000, scholars have noticed that segregation has declined even further and that African Americans have started moving to older areas and integrating into new suburban areas because of the mortgage credit policy (Glaeser and Jacob, 2012). Though America's suburbs are now as diverse as large central cities were 30 years ago, these suburbs are also experiencing the similar cycle of racial segregation and inequality that has haunted central cities for decades (Logan, 2014). Studies have also claimed that it is not just about segregation but also a part of an economic, social and geographic phenomenon that influences location choices and housing conditions (Frazier, 2010). Clearly, it is unlikely that racial-ethnic segregation will disappear soon from American urban areas, but the magnitude of segregation has declined over the last three decades (Frey, 2015).

As immigrants have become more geographically dispersed throughout the U.S. multiple disciplines have attempted to understand the magnitude of segregation between groups using a variety of methods (Hall, 2013). Clark and Blue (2004) did not look directly at segregation among immigrant groups, but did assess segregation

among Blacks, Asians and Hispanics from Whites in a small sample of immigrant gateway cities (cities that immigrants come to first in the United States). They found that all groups tended to be less segregated in the suburbs, though the suburban advantage tended to be smaller for Latinos and Asians than it was for Blacks (and occasionally the advantage is reversed). Clark (2007) found further evidence of Asian and Latino integration in the suburbs relative to cities. Massey (2009) found that the pricing of houses and anti-density zoning resulted in increased racial segregation, limiting immigrant residents to specific areas, which additionally resulted in increased segregation. Lichter et al. (2010) analyzed Hispanic settlement patterns in a much larger sample of places and found that in 2000 Hispanics were generally less segregated in suburban places than they were in central cities. However, Hispanic suburbanites tended to be highly segregated in a subset of new destinations where the growing Hispanic population was disproportionately foreign-born.

Farrell's study (2014) used 2000–2012 data from the decennial census and American Community Survey at county level to focus on how suburbanization affects the residential segregation of those who are foreign-born by tracking the suburban settlement patterns of 17 country of origin groups. Findings of this study showed that segregation has declined in cities, but increased in suburban areas due to an increase in new arrivals of immigrant populations who prefer to live in suburbs earlier in their settlement in the MSA area. Hall et al. (2015) studied virtually all foreclosure events in the United States between 2005 and 2009, and they calculated neighborhood foreclosure rates at the U.S.

block group level to evaluate the influence of housing foreclosures on immigrant neighborhood change and on the large patterns of immigrants' residential segregation. They found that the foreclosure crisis showed a pattern strongly aligned with racial segregation lines, such as Blacks and Latinos being linked to neighborhoods that had especially high foreclosure rates. The research suggests that the patterns of residential segregation remained the same in 21st century.

3.3 Research Questions

This study adds to the growing body of literature related to immigrants' segregation patterns in the Atlanta MSA by exploring the following research questions:

1. What are the spatial segregation patterns of immigrant populations?
2. How does the index of dissimilarity differ between foreign-born populations vs. native-born Black groups and foreign-born populations vs. native-born White groups?
3. What are the top 20 census tracts with highest concentration of foreign-born people?
4. What census tracts have the lowest concentration of foreign-born people?

The answer for these questions will be discussed in the nest section by applying the index of dissimilarity (ID) measurement, and the Location Quotient (LQ) measurement.

3.4 Research Design Methods, Study Area, Data

3.4.1 Methods

This study explores immigrants' segregation patterns in settling in specific census tracts within counties of the Atlanta MSA. Segregation involves the separation of socially defined groups in space, such that members of one group are disproportionately concentrated in a set of geographic units compared with other groups in the population (Massey, 2009). Most ethnicity distribution studies in the U.S. analyze segregation by finding the effects of an index of dissimilarity score to explain the segregation among different population groups. The groups themselves may be defined based on any significant characteristics such as race, ethnicity, income, education, age, and so on. This research examines whether place of birth, regions of origin, and continent of origin influence immigrants' segregation and integration in the Atlanta MSA by applying both the index of dissimilarity (ID) and Location Quotient (LQ).

3.*4.2 Index of Dissimilarity*

The index of dissimilarity measurement has been a widely-utilized method in segregation literature and is a valuable way to understand racial and ethnic residential segregation patterns (Logan and Parman, 2013). The index of dissimilarity shows the magnitude of difference between two groups of population (Yalonetzky, 2010). The formula to calculate the index of dissimilarity for two racial or ethnic groups within the Atlanta metropolitan area is as follows:

$$D = \frac{1}{2} \times \sum_{j=1}^{J} \left| \frac{x_j}{X} - \frac{y_j}{Y} \right|$$

For example:
X = Total Foreign-born population in the county
x_j = Foreign-born population by census tracts i of population Group 1
Y = Total Native-born population in the county
y_i = Native-born population by census tracts i population of Group 2

The results of the index of dissimilarity, for this study, were grouped into three categories as other researchers used (Logan and Parman, 2013): >.75 = highly segregated, >.50 -.74 = moderately segregated, <=.5 = lowly segregated.

3.4.3 Location Quotient

Since the index of dissimilarity only measure segregation at the county level, not at the census tract level, the location quotient (LQ) is another valuable way to view the segregation of population groups using census tract geography. Mathematically, the location quotient is simply a ratio of ratios, with the top ratio equaling the fractional share of the subject of interest at the local level and the bottom at the regional level (Chen, 1994). The location quotient is used to represent dynamic localization of particular population group to estimate whether they are clustering in particular areas (Mizuno et al. 2006). Therefore, LQs are used to identify census tracts that share specific groups of foreign-born populations compared to the average Atlanta MSA. In this study, I use the following formula to apply the location quotient:

LQ= (TBi/TPi) / (TBa/TPa),

where
TBi = Total number of Foreign-born (FB) residents in Census tract i,
TPi = Total residents in Census i,
TBa = Total number of FB residents in the county
TPa = Total residents in the county

3.4.4 Study Area

The 29 counties of the Atlanta Metropolitan Statistical Area (MSA), which is made up of 961 census tracts from the Southeastern part of the U.S. is used for this research (Figure 3.1). The Atlanta MSA was chosen because it is one of the largest urban areas in the United States and has the second fastest growing foreign-born population among the nation's 20 largest metropolitan areas. Atlanta's immigrant population is higher than the national average of 13% (Metro Atlanta Profile, 2011). Atlanta has become as an international gateway for communities from diverse backgrounds, such as native-born Whites, native-born Blacks, and immigrants from international sources with different cultural and religious landscapes (Strait and Gong, 2015). The Atlanta MSA has been become forefront of the Sunbelt's economic and population growth during the last few decades (Strait and Gong, 2015). Atlanta is the most business friendly American major city, and among the top ten American cities of the future (Metro Atlanta Profile, 2011). According to ACS 2013, the Atlanta MSA had a total population of 5,309,620; the foreign-born population accounted for 13.75%. It is expected that by 2020, the population

for 29 counties will cross 6.4 million, including an additional 1.25 million foreign-born populations.

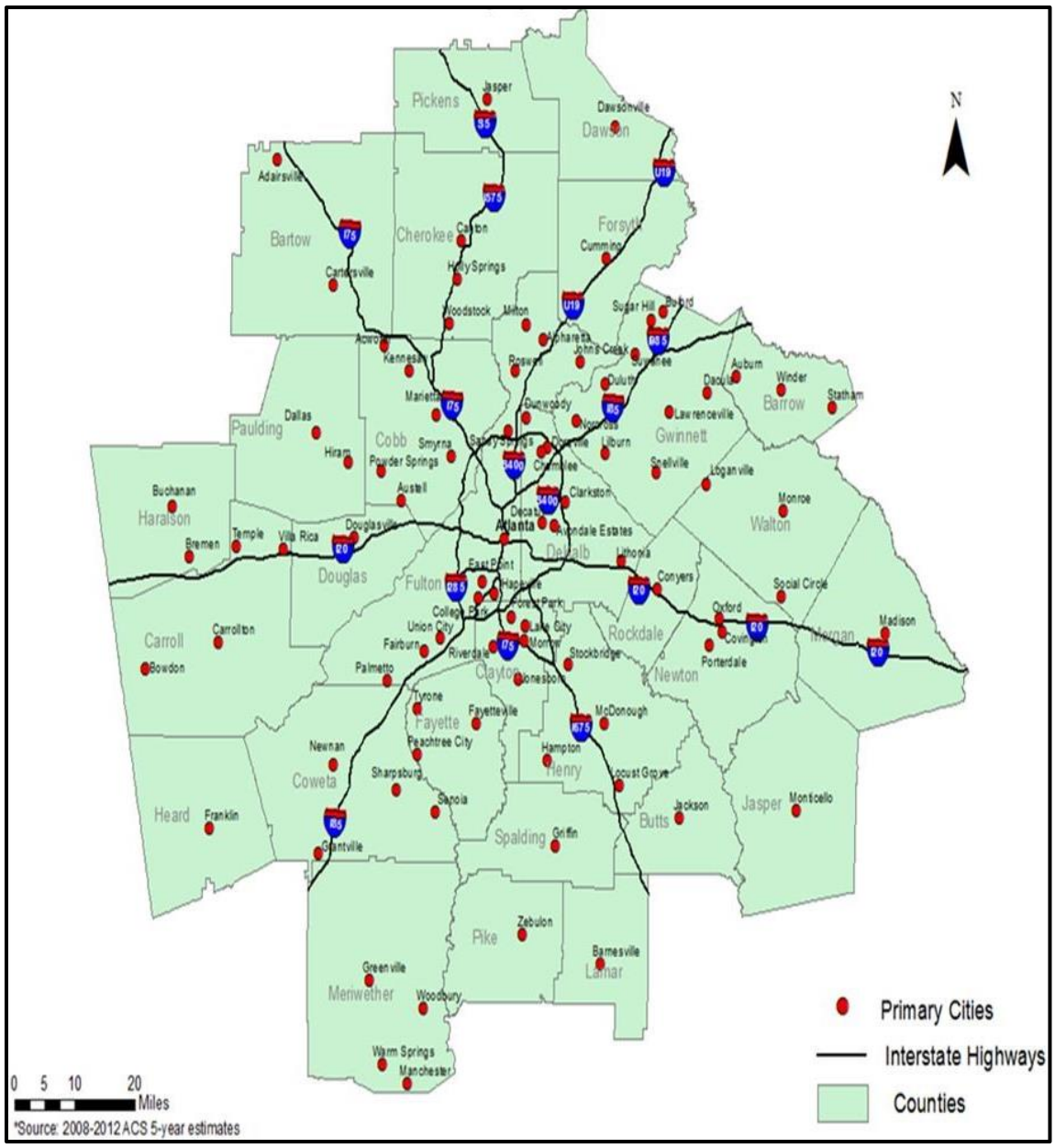

Figure 3.1. The Atlanta-Sandy Spring-Roswell Metropolitan Area within 29 Counties, 2013. Source: U.S. Bureau of the Census, American Community Survey, 2008-2012.

However, in the early 20th century Atlanta was the first city in the United States with a comprehensive racial zoning plan when it was approved on April 10, 1922. Between the 1930s and 1960s, Blacks in Atlanta lobbied to expand their enclaves, but they ran up against White resistance (Bayor, 2000). The 'economic forces' also segregated Blacks from the new suburban job market and created two separate, but starkly unequal places (Beers and Hembree, 1987). In 1974, "Jackson strongly challenged White financial privilege, redistributing the wealth through that shrine to Atlanta's New South supremacy, the Hartsfield Atlanta International Airport" (McWhorter, 2003). Given this racial segregation history in the Atlanta as well as thriving economy and diversity (Alvarez, 2016), Atlanta is a perfect laboratory to ask research questions that I proposed in this paper.

3.4.5 Data

This study uses detailed housing and demographic characteristics data at census tract geographic level from the five-year estimations of the America Community Survey (ACS) data of 2008-2012. The 2013 ACS data includes variables that provide detailed demographic and socioeconomic characteristics of foreign-born populations for census tract geography, including immigrants' origins of the countries. Socio-economic demographics such as immigrants' levels of education and proficiencies in English language are also included. Additionally, the shape files for the boundaries of 29 counties of the Atlanta MSA and census tracts boundaries within these 29 counties were collected from Tiger census boundary files.

3.5 Results and Discussion

3.5.1 Geographic Distribution of Residential Segregation between Foreign-born and Native-born Populations by County

In this section, I have calculated the Index of Dissimilarity (ID) values by counties to show the magnitude of segregation between population groups across Atlanta MSA (Table 3.1). First, the comparison between foreign–born and native-born populations shows that the majority of counties in the Atlanta MSA have low segregation levels between these two groups (ID=<0.5). The highest segregation value between foreign-born and native-born populations is found in Meriwether County with an ID score of 0.60, which indicates that these two population groups in Meriwether County are moderately segregated (Figur3.2). Lamar County shows the lowest level of segregation between foreign-born and native-born population with an ID score of 0.0813.

The comparison between foreign–born and native-born White populations show that most counties have low segregation values as well, except in Gwinnett County (ID= 0.81). This result is surprising since Gwinnett County is known as the most diverse county in the Atlanta MSA (Pendered, 2012). However, this result is consistent with the literature that claimed that the most diverse MSAs are the most segregated MSAs in the U.S.A (Silver, 2015). Therefore, this result indicates that even though Gwinnet County has a diverse population, the foreign-born and native-born white neighborhoods are highly segregated. The ID values between foreign–born and native-born White populations increase to the middle level of segregation at 0.63 and 0.51, respectively, in

Meriwether County, which is in the exurb area of Atlanta, and DeKalb County located in inner suburban area.

The ID values of foreign-born vs native-born Black populations (Table 3.1) show that most counties have low segregation values, except Dawson County (ID value .76), which is located in the northern boundaries of the MSA. Foreign-born vs native-born Blacks are moderately segregated in DeKalb County and Fulton County as well as in Heard, Meriwether and Walton County. Table 3.1 (fourth column) further shows the scores for index of dissimilarity between the foreign-born populations from developed countries vs. the native-born White population (thus, two groups that are likely to have higher socioeconomic status). There are two highly segregated counties here: Gwinnett County with the score of 0.80, and Meriwether County with the score of 0.79, both of which are located outside of the city of Atlanta.

The comparison between foreign-born populations from non-developed countries and the native-born Black population reveals that Spalding (ID=0.86) and Fulton (ID=0.75) are highly segregated between these two groups. The comparison between foreign-born populations from non-developed countries and the native-born White population in the Atlanta MSA shows Gwinnett County with the index score of 0.81 being highly segregated. DeKalb County also has a higher segregation between these two groups of populations.

Table 3.1 Index of Dissimilarity (ID) of Foreign-born Population vs. Native-born Population by County

County	FB* vs. NB* Population ID	FB vs. NB White Population ID	FB vs. NB Black ID	FB Dev Country vs. NB White Population	FB Dev Country ID	FB Non-Dev Country ID	FB Non-Dev Country vs. NB Black	FB W vs. N White ID	FB W vs. N Black ID
Barrow County	0.2499	0.2711	0.2566	0.335	0.4704	0.2835	0.2558	0.3295	0.466
Bartow County	0.2343	0.2629	0.1965	0.4491	0.5463	0.2704	0.2068	0.4491	0.5463
Butts County	0.3191	0.383	0.1634	0.3406	0.4351	0.4153	0.1958	0.3406	0.4351
Carroll County	0.4004	0.4458	0.2856	0.3525	0.3918	0.4685	0.2938	0.3577	0.4008
Cherokee County	0.2513	0.2659	0.2356	0.2109	0.3749	0.3211	0.2523	0.2251	0.3853
Clayton County	0.2093	0.2864	0.2633	0.4206	0.411	0.2894	0.2679	0.4354	0.4338
Cobb County	0.2624	0.3701	0.2748	0.2682	0.5145	0.3999	0.2727	0.2737	0.5052
Coweta County	0.2518	0.2788	0.344	0.2863	0.4099	0.3143	0.3426	0.2877	0.4119
Dawson County	0.1508	0.1404	0.7663	0.2427	0.44	0.1589	0.8102	0.2357	0.4681
DeKalb County	0.4147	0.5151	0.5898	0.2927	0.7109	0.5423	0.5874	0.2873	0.7054
Douglas County	0.2096	0.2584	0.2258	0.2715	0.3733	0.2721	0.2386	0.2914	0.3684
Fayette County	0.1713	0.2118	0.349	0.2112	0.507	0.2646	0.3218	0.1946	0.5053
Forsyth County	0.2486	0.2635	0.3604	0.2996	0.4338	0.2914	0.3624	0.3172	0.4445
Fulton County	0.3688	0.3681	0.6329	0.2747	0.7525	0.3985	0.6244	0.2846	0.7529
Gwinnett County	0.2623	0.8116	0.2734	0.8008	0.462	0.8134	0.2787	0.8008	0.4568
Haralson County	0.2959	0.3067	0.1652	0.2655	0.1932	0.4793	0.3823	0.3688	0.3101
Heard County	0.4997	0.4883	0.5124	0	0	0.4883	0.5124	0	0
Henry County	0.2634	0.3687	0.1803	0.3919	0.3995	0.3902	0.1904	0.395	0.4159
Jasper County	0.1799	0.2394	0.0569	0.2327	0.1028	0.4289	0.0798	0.2327	0.1028
Lamar County	0.0813	0.0776	0.3224	0.3736	0.3096	0.0202	0.3644	0.3736	0.3096
Meriwether County	0.6054	0.635	0.5558	0.7949	0.6876	0.6347	0.5555	0.7949	0.6876
Morgan County	0.2417	0.2742	0.2131	0.3293	0.5038	0.2808	0.1583	0.3293	0.5038
Newton County	0.2033	0.3333	0.1503	0.3518	0.4322	0.3631	0.1204	0.3844	0.4513
Paulding County	0.1655	0.1896	0.1781	0.308	0.4272	0.2153	0.187	0.3013	0.4558
Pickens County	0.3357	0.3398	0.4262	0.4931	0.5104	0.4287	0.5436	0.4595	0.495
Pike County	0.1977	0.2047	0.1638	0.2115	0.0626	0.3045	0.2697	0.2115	0.0626
Rockdale County	0.2926	0.3893	0.2538	0.259	0.3379	0.4011	0.2577	0.2703	0.3611
Spalding County	0.2636	0.3186	0.3247	0.4962	0.8687	0.3332	0.4959	0.4124	0.7749
Walton County	0.3547	0.3452	0.5207	0.4035	0.3762	0.3796	0.5476	0.4843	0.4126

*FB = Foreign-born; *NB=Native-born; *W=Western. Segregation Levels:
Low Segregated=0.3332, Moderately Segregate=0.5076, Highly Segregated=0.8687.
Source: U.S. Bureau of the Census, American Community Survey 2008-2012.

The comparison between foreign–born populations from western countries versus the native-born White population shows generally low segregation values, except for two counties, which have high scores of segregation. These counties are Gwinnett County

with the score of 0.80 and Meriwether County with 0.79. Finding ID score between non-citizens vs. citizen population groups within Atlanta MSA another category to see the distribution of foreign-born populations regarding to their citizenship in the U.S, in this analysis the results show similar pattern with ID between foreign-born vs, native-born populations. The high score of ID find in Heard County, which is located in the southwest of the Atlanta MSA, has the highest segregation of citizen groups (Figure 3.2 and 3.3).

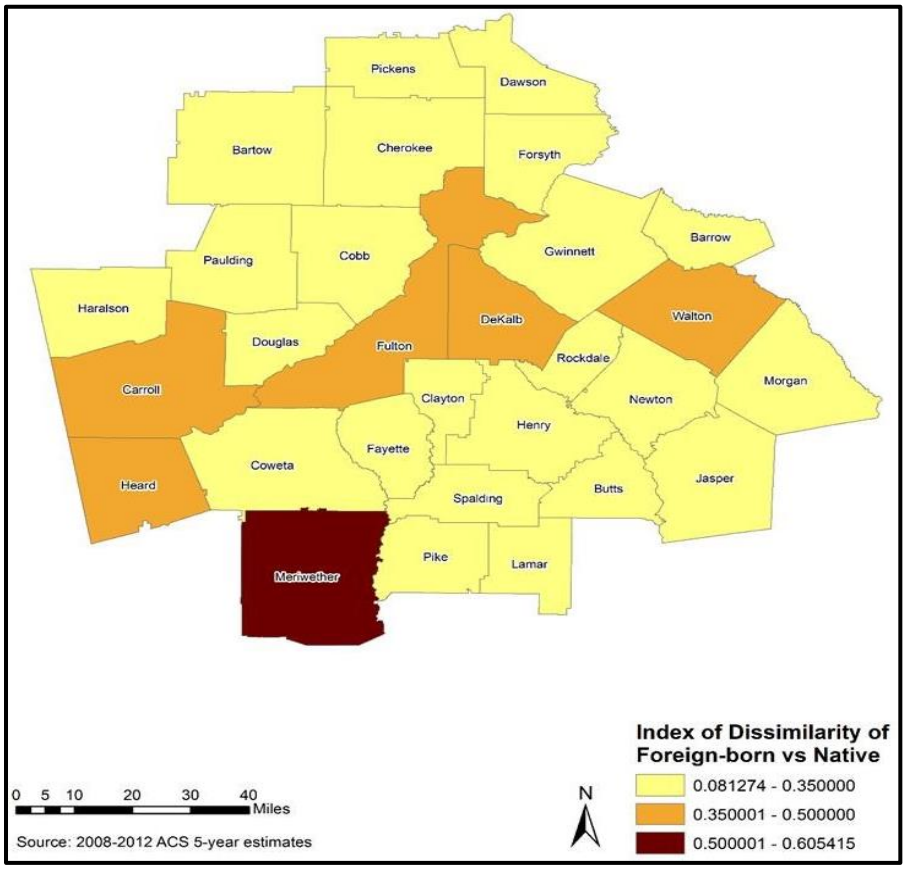

Figure 3.2. Index of Dissimilarity of Foreign-born Population vs. Native-born Population by County in Atlanta-Sandy Spring-Roswell Metropolitan Area, 2013. Source: U.S. Bureau of the Census, American Community Survey, 2008-2012.

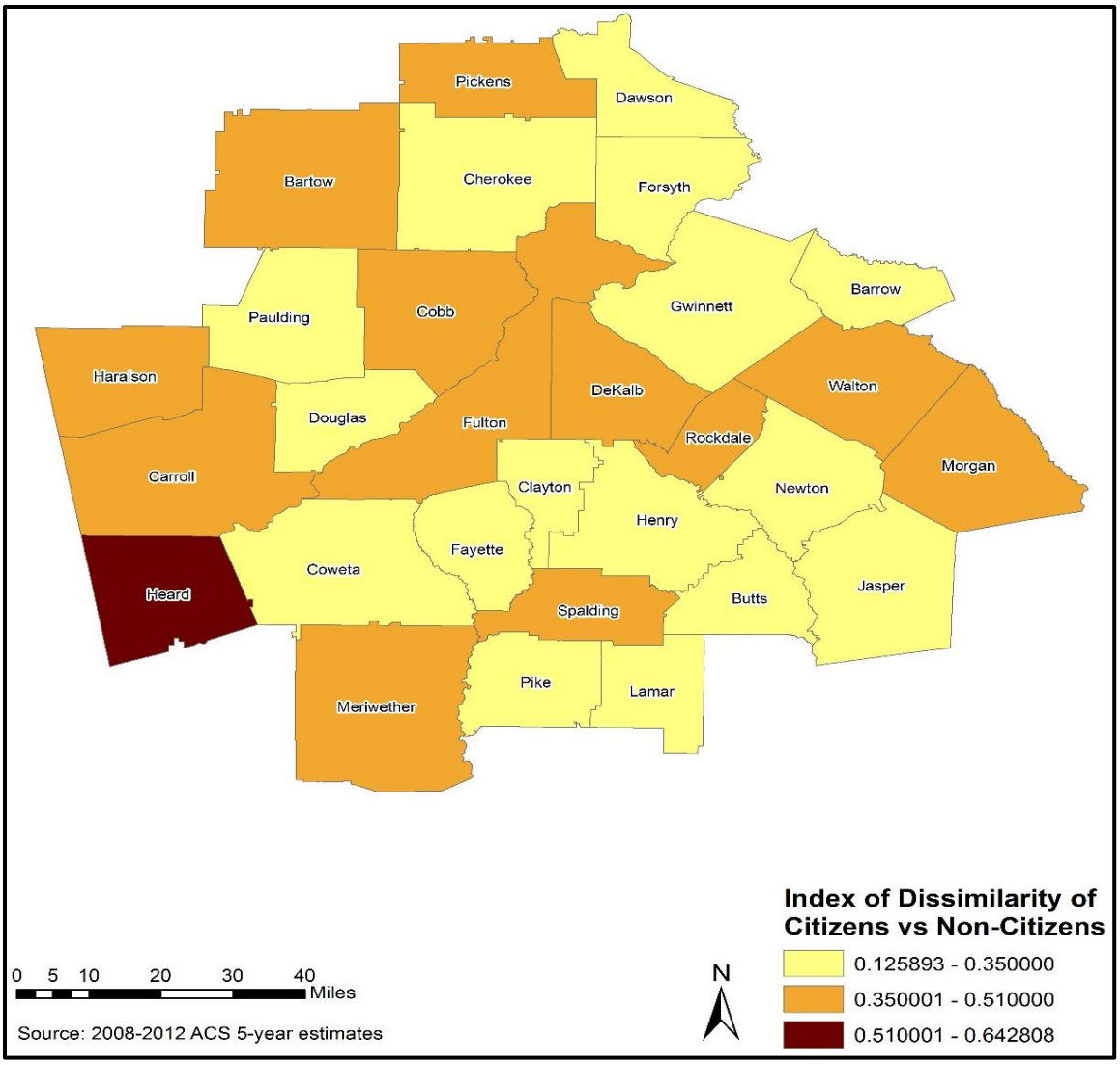

Figure 3.3. Index of Dissimilarity of Citizen Population vs. Non-citizen Population by County in Atlanta-Sandy Spring-Roswell Metropolitan Area, 2013. Source: U.S. Bureau of the Census, American Community Survey, 2008-2012

3.5.2 Index of Dissimilarity of Foreign-born Populations by Region of Origin with Native-born Populations by County

This section provides a brief overview of index of dissimilarity values of foreign-born populations from 20 related regions of origin. The reason for using this source of measurement is to understand why similar cultures or particular groups of immigrants tend to live in or near one another in the Atlanta MSA. The index of dissimilarity (ID) is the best way to estimate immigrant clustering and to determine how immigrants can be segregated at low, moderate, or high values (Shon and Verdugo, 2014). I analyzed the index of dissimilarity (ID) of foreign-born populations by region of origin at the county level in three different levels to find high, middle, and low classes of segregations. This analysis find the distribution of groups by counties in the Atlanta MSA. I calculated the index of dissimilarity (ID) of foreign-born population by region with Native-born population, then I calculated index of dissimilarity (ID) of foreign-born population by region with native White population, and finally, I calculated the Index of dissimilarity (ID) of foreign-born population by region with native Black population. Three tables (Tables 3.2, 3.3, and 3.4) show the portrayal of segregation drawn by region of origin of foreign-born populations against these native-born populations.

Index of dissimilarity (ID) values for foreign-born populations by region vs. native-born population present three levels of segregation, the results in Table 3.2 show that the highest segregation value is found in Heard country, located in the eastern part of MSA within the exurb area. This is a population from Eastern Europe, with the ID score of 0.99. Foreign-born persons from the Central American region show low segregation

values below 0.35; this can be found in 6 counties, respectively: Jasper, Dawson, Barton, Butts, Clayton, and Lamar County. These patterns appear because recently, new immigrants have chosen to live in areas with higher levels of residential segregation from native-born Whites; however, this is different for immigrants who have been living in the U.S for a longer period such as 10 to 20 years (Waters and Pineau, 2015). Other factors, such as education and economic status, guide immigrants to choose an area for living. For instance, Asians groups are the least segregated from native-born Whites in the Atlanta metropolitan area, followed by Hispanics, and then African immigrants, who are the most segregated.

3.5.3 Index of Dissimilarity (ID) of Foreign-born Population by Region of Origin with Native-born White Population

The result in Table 3.3 shows that the highest level of segregation for foreign-born populations with native White population is by the East European group in Heard County, which located in the exurb area of the MSA, with an index degree of 1.0. Then, Gwinnett County has the second highest segregation by all 20 groups of foreign-born populations, with scores above 0.75 (thus, high levels of segregation). These results from Table 3.3, which are based on region of origin, verify the previous results from Table 3.1 which were based on native population and geographic and economic distribution. This is a plausible result as the location of the county is in urban and exurb areas of the MSA; these findings reflect the theory that immigrants are influenced by space, particularly immigrants who choose to locate near co-ethnics to share resources and their common culture (Logan et al., 2002).

The lowest segregation appears to be by the foreign-born population from Central America in 7 exurban counties, respectively, Jaspar, Dawson, Douglas, Spalding, Lamar, Butts, and Bartow County. In addition, the Caribbean population in Newton County shows low segregation by ID with a degree below < 0.5.

3.5.4 Index of Dissimilarity (ID) of Foreign-born Population by Region of Origin with Native Black Population

In this section, Table 3.4 shows that the highest segregation value for foreign-born vs. native-Black population occurs with Eastern Europe populations in Heard County, as previous results also state, with an ID of 0.98. Nineteen groups of foreign-born populations have moderate segregation scores above > 0.50; 8 are located in Dawson County and 6 are located in Forsyth County (Table 3.4). This reflects that native-born Blacks experience higher rates of segregation than other minority groups and segregation rates within a race differ considerably across regions (Massey and Denton, 1993). Moreover, Central American groups have the lowest segregation level with native Blacks but only in 3 counties, respectively, Jaspar, Butts, and Lamar County with an ID below < 0.35.

In summary, Tables 3.2, 3.3, and 3.4 show low segregation values for most counties, while some show moderately segregated values at degrees > 0.50. The ID of foreign-born population by region with native White population, Gwinnett County showed the highest segregation by all 20 groups of foreign-born populations with the degree more than > 0.75 (Table 3.3). Additionally, foreign-born populations from Central America showed the least segregation across all geographic levels of analysis.

Table 3.2 Index of Dissimilarity of Foreign-born Population by Region vs. Native-born Population by County

County	EAfrica	MidAfrica	NAfrica	WAfrica	SAfrica	Casia	Easia	SE_Asia	Sasia	WAsia	EEurope	NEurope	SEurope	WEurope	Caribbean	CAmerica	SAmerica	NAmerica	Aus_NZ	Ocean
Barrow County	0.5000	0.5000	0.5000	0.4889	0.5000	0.5000	0.4839	0.4204	0.4789	0.5000	0.4717	0.4895	0.4956	0.4921	0.4707	0.3545	0.4185	0.4983	0.5000	0.5000
Bartow County	0.5000	0.5000	0.4984	0.4976	0.5000	0.4984	0.4737	0.4913	0.4771	0.5000	0.4954	0.4933	0.4977	0.4609	0.4871	0.3186	0.4752	0.4846	0.5000	0.4991
Butts County	0.5000	0.5000	0.5000	0.4810	0.5000	0.5000	0.4993	0.4915	0.3782	0.5000	0.5000	0.4592	0.5000	0.4965	0.4789	0.3141	0.4113	0.5000	0.5000	0.5000
Carroll County	0.5000	0.4980	0.5000	0.4758	0.5000	0.5000	0.4770	0.4837	0.4744	0.4959	0.4747	0.4811	0.4874	0.4883	0.4567	0.3927	0.4889	0.4947	0.5000	0.5000
Cherokee County	0.4931	0.4994	0.4955	0.4898	0.4936	0.4977	0.4814	0.4760	0.4667	0.4967	0.4715	0.4731	0.4944	0.4825	0.4779	0.3786	0.4437	0.4835	0.4995	0.4997
Clayton County	0.4733	0.4750	0.4744	0.4374	0.4750	0.4741	0.4676	0.3754	0.4607	0.4734	0.4739	0.4711	0.4748	0.4720	0.3998	0.3368	0.4657	0.4746	0.4753	0.4753
Cobb County	0.4824	0.4966	0.4987	0.4777	0.4960	0.4998	0.4694	0.4751	0.4489	0.4919	0.4862	0.4865	0.4951	0.4889	0.4541	0.3871	0.4603	0.4897	0.4995	0.4997
Coweta County	0.4983	0.5000	0.4991	0.4986	0.4853	0.5000	0.4805	0.4715	0.4796	0.4935	0.4776	0.4763	0.4928	0.4539	0.4665	0.4190	0.4736	0.4856	0.4994	0.5000
Dawson County	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.4567	0.4496	0.5000	0.4810	0.4775	0.4881	0.5000	0.4650	0.4929	0.2746	0.4733	0.4911	0.4964	0.5000
DeKalb County	0.4707	0.4975	0.4941	0.4748	0.4971	0.4994	0.4663	0.4680	0.4611	0.4911	0.4897	0.4897	0.4953	0.4940	0.4348	0.4670	0.4714	0.4937	0.4990	0.5000
Douglas County	0.4981	0.4941	0.4997	0.4378	0.4992	0.5000	0.4832	0.4786	0.4856	0.4994	0.4834	0.4914	0.4977	0.4931	0.3908	0.3541	0.4765	0.4916	0.5000	0.4994
Fayette County	0.4904	0.5000	0.4965	0.4807	0.4970	0.5000	0.4439	0.4501	0.4479	0.4914	0.4925	0.4730	0.4933	0.4632	0.4283	0.4159	0.4789	0.4779	0.4984	0.5000
Forsyth County	0.4948	0.4995	0.4983	0.4947	0.4895	0.4959	0.4570	0.4707	0.4278	0.4931	0.4698	0.4815	0.4868	0.4806	0.4809	0.3730	0.4565	0.4877	0.4989	0.5000
Fulton County	0.4936	0.4967	0.4959	0.4833	0.4949	0.4975	0.4601	0.4819	0.4470	0.4863	0.4782	0.4834	0.4920	0.4851	0.4706	0.4583	0.4689	0.4890	0.4978	0.4994
Gwinnett County	0.4887	0.4985	0.4985	0.4811	0.4988	0.4998	0.4538	0.4559	0.4520	0.4956	0.4840	0.4922	0.4882	0.4956	0.4547	0.3679	0.4603	0.4950	0.4994	0.4998
Haralson County	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.4340	0.4470	0.4518	0.5000	0.5000	0.4569	0.5000	0.3680	0.4810	0.4280	0.5000	0.5000	0.5000	0.5000
Heard County	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.4053	0.5000	0.5000	0.9895	0.5000	0.5000	0.5000	0.5000	0.3571	0.4286	0.5000	0.5000	0.5000
Henry County	0.4848	0.4974	0.4942	0.4692	0.5000	0.5000	0.4778	0.4361	0.4427	0.5000	0.4909	0.4932	0.4959	0.4798	0.3853	0.4359	0.4689	0.4864	0.4990	0.5000
Jasper County	0.5000	0.5000	0.5000	0.4905	0.5000	0.5000	0.5000	0.4610	0.5000	0.5000	0.5000	0.5000	0.5000	0.4208	0.4397	0.1950	0.4929	0.5000	0.5000	0.5000
Lamar County	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.4603	0.3675	0.5000	0.5000	0.4785	0.4586	0.5000	0.4619	0.4752	0.3411	0.4868	0.4553	0.5000	0.5000
Meriwether Count	0.4790	0.4545	0.5000	0.5000	0.5000	0.5000	0.4510	0.5000	0.4755	0.4301	0.4825	0.5000	0.5000	0.5000	0.4485	0.4615	0.5000	0.4895	0.5000	0.5000
Morgan County	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.4922	0.5000	0.4860	0.5000	0.4455	0.4735	0.5000	0.5000	0.5562	0.4283	0.4704	0.4470	0.5000	0.5000
Newton County	0.4847	0.4976	0.4964	0.4846	0.5000	0.5000	0.4904	0.4737	0.4875	0.5000	0.4826	0.4922	0.4888	0.4741	0.3708	0.3651	0.4653	0.4859	0.4989	0.5000
Paulding County	0.4747	0.4992	0.4982	0.4748	0.4985	0.5000	0.4592	0.4839	0.4773	0.4941	0.4827	0.4737	0.4873	0.4902	0.4000	0.3857	0.4549	0.4918	0.5000	0.5000
Pickens County	0.5000	0.5000	0.4510	0.5000	0.4957	0.5000	0.4657	0.4908	0.4252	0.5000	0.4975	0.4473	0.5000	0.4706	0.4835	0.4735	0.5000	0.4926	0.5000	0.5000
Pike County	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.4843	0.4817	0.4110	0.5000	0.4607	0.3901	0.4712	0.4843	0.5000	0.3770	0.4555	0.4555	0.5000	0.5000
Rockdale County	0.4910	0.4977	0.4987	0.4837	0.5000	0.5000	0.4924	0.4775	0.4718	0.4962	0.4859	0.4941	0.4991	0.4922	0.3803	0.4393	0.4687	0.4938	0.4996	0.5000
Spalding County	0.4921	0.5000	0.5000	0.5000	0.4924	0.5000	0.4494	0.4813	0.4453	0.4956	0.4991	0.4626	0.5000	0.4804	0.4684	0.3718	0.4886	0.4871	0.5000	0.5000
Walton County	0.5000	0.5000	0.5000	0.4826	0.5000	0.4944	0.4828	0.4399	0.4833	0.5000	0.4929	0.4915	0.5191	0.4937	0.4121	0.4014	0.4569	0.4846	0.4988	0.5000

Note. Source: U.S. Bureau of the Census, American Community Survey, 2008-2012.

< 0.35	no class Segregated
> 0.50	Middle class Segregated
> 0.75	High class Segregated

Table 3.3 Index of Dissimilarity (ID) of Foreign-born Population by Region with Native-White Population at County Level

County	EAfrica	MidAfrica	NAfrica	WAfrica	SAfrica	Casia	Easia	SE_Asia	Sasia	WAsia	EEurope	NEurope	SEurope	WEurope	Caribbean	CAmerica	SAmerica	NorAmeric	Aus_NZ	OthOcean
Barrow County	0.5000	0.5000	0.5000	0.4889	0.5000	0.5000	0.4839	0.4204	0.4789	0.5000	0.4717	0.4895	0.4956	0.4921	0.4707	0.3565	0.4185	0.4983	0.5000	0.5000
Bartow County	0.5000	0.5000	0.4984	0.4976	0.5000	0.4984	0.4737	0.4913	0.4771	0.5000	0.4954	0.4933	0.4977	0.4609	0.4871	0.3158	0.4752	0.4815	0.5000	0.4991
Butts County	0.5000	0.5000	0.5000	0.4810	0.5000	0.5000	0.4993	0.4915	0.3782	0.5000	0.5000	0.4592	0.5000	0.4965	0.4789	0.3167	0.4113	0.5000	0.5000	0.5000
Carroll County	0.5000	0.4980	0.5000	0.4758	0.5000	0.5000	0.4770	0.4837	0.4744	0.4959	0.4747	0.4811	0.4874	0.4883	0.4567	0.3772	0.4889	0.4947	0.5000	0.5000
Cherokee County	0.4934	0.4998	0.4958	0.4901	0.4939	0.4981	0.4817	0.4763	0.4670	0.4970	0.4718	0.4735	0.4947	0.4828	0.4782	0.3797	0.4440	0.4838	0.4998	0.5000
Clayton County	0.4980	0.4997	0.4991	0.4651	0.4997	0.4988	0.4919	0.4052	0.4854	0.4980	0.4986	0.4956	0.4995	0.4970	0.4337	0.3961	0.4903	0.4993	0.5000	0.5000
Cobb County	0.4825	0.4966	0.4987	0.4783	0.4960	0.4998	0.4696	0.4751	0.4509	0.4919	0.4862	0.4865	0.4951	0.4889	0.4553	0.4171	0.4653	0.4902	0.4995	0.4997
Coweta County	0.4983	0.5000	0.4991	0.4986	0.4853	0.5000	0.4805	0.4715	0.4796	0.4935	0.4776	0.4763	0.4928	0.4539	0.4665	0.4352	0.4736	0.4856	0.4994	0.5000
Dawson County	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.4567	0.4496	0.5000	0.4810	0.4775	0.4881	0.5000	0.4650	0.4929	0.2746	0.4733	0.4911	0.4964	0.5000
DeKalb County	0.4880	0.4975	0.4948	0.4825	0.4976	0.4994	0.4741	0.4739	0.4844	0.4935	0.4912	0.4904	0.4958	0.4940	0.4646	0.4647	0.4761	0.4940	0.4990	0.5000
Douglas County	0.4981	0.4941	0.4997	0.4378	0.4992	0.5000	0.4832	0.4786	0.4856	0.4994	0.4834	0.4914	0.4977	0.4931	0.3878	0.3469	0.4765	0.4916	0.5000	0.4994
Fayette County	0.4904	0.5000	0.4965	0.4807	0.4970	0.5000	0.4439	0.4501	0.4479	0.4914	0.4925	0.4730	0.4933	0.4632	0.4283	0.4288	0.4789	0.4779	0.4984	0.5000
Forsyth County	0.4948	0.4995	0.4983	0.4947	0.4895	0.4959	0.4556	0.4707	0.4251	0.4931	0.4698	0.4815	0.4868	0.4806	0.4809	0.3745	0.4565	0.4877	0.4989	0.5000
Fulton County	0.4968	0.4986	0.4968	0.4895	0.4992	0.4980	0.4664	0.4901	0.4656	0.4894	0.4879	0.4908	0.4957	0.4896	0.4808	0.5041	0.4837	0.4951	0.4982	0.4995
Gwinnett County	0.9895	0.9993	0.9993	0.9819	0.9996	0.9996	0.9414	0.9567	0.9528	0.9964	0.9848	0.9930	0.9890	0.9965	0.9547	0.8309	0.9611	0.9958	0.9993	0.9996
Haralson County	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.4340	0.4443	0.4518	0.5000	0.5000	0.4569	0.5000	0.3680	0.4810	0.4253	0.5000	0.5000	0.5000	0.5000
Heard County	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.3999	0.5000	0.5000	1.0000	0.5000	0.5000	0.5000	0.5000	0.3571	0.4286	0.5000	0.5000	0.5000
Henry County	0.4848	0.4974	0.4942	0.4692	0.5000	0.5000	0.4778	0.4377	0.4571	0.5000	0.4909	0.4932	0.4959	0.4798	0.4017	0.4377	0.4689	0.4864	0.4990	0.5000
Jasper County	0.5000	0.5000	0.5000	0.4905	0.5000	0.5000	0.5000	0.4610	0.5000	0.5000	0.5000	0.5000	0.5000	0.4208	0.4397	0.1950	0.4929	0.5000	0.5000	0.5000
Lamar County	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.4603	0.3675	0.5000	0.5000	0.4785	0.4586	0.5000	0.4619	0.4752	0.3411	0.4868	0.4553	0.5000	0.5000
Meriwether Count	0.4790	0.4545	0.5000	0.5000	0.5000	0.5000	0.4510	0.5000	0.4755	0.4301	0.4825	0.5000	0.5000	0.5000	0.4872	0.4615	0.5000	0.4895	0.5000	0.5000
Morgan County	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.4922	0.5000	0.4860	0.5000	0.4455	0.4735	0.5000	0.5000	0.5415	0.4283	0.4704	0.4470	0.5000	0.5000
Newton County	0.4847	0.4976	0.4964	0.4846	0.5000	0.5000	0.4904	0.4737	0.4875	0.5000	0.4826	0.4922	0.4888	0.4741	0.3474	0.3651	0.4653	0.4859	0.4989	0.5000
Paulding County	0.4747	0.4992	0.4982	0.4748	0.4985	0.5000	0.4592	0.4839	0.4773	0.4941	0.4827	0.4737	0.4873	0.4902	0.4000	0.3932	0.4549	0.4918	0.5000	0.5000
Pickens County	0.5000	0.5000	0.4510	0.5000	0.4957	0.5000	0.4657	0.4908	0.4252	0.5000	0.4975	0.4473	0.5000	0.4706	0.4835	0.4689	0.5000	0.4926	0.5000	0.5000
Pike County	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.4843	0.4817	0.4110	0.5000	0.4607	0.3901	0.4712	0.4843	0.5000	0.3770	0.4555	0.4555	0.5000	0.5000
Rockdale County	0.4910	0.4977	0.4987	0.4837	0.5000	0.5000	0.4924	0.4775	0.4718	0.4962	0.4859	0.4941	0.4991	0.4922	0.3776	0.4111	0.4687	0.4938	0.4996	0.5000
Spalding County	0.4921	0.5000	0.5000	0.5000	0.4924	0.5000	0.4494	0.4813	0.4777	0.4956	0.4991	0.4626	0.5000	0.4804	0.4743	0.3426	0.4886	0.4871	0.5000	0.5000
Walton County	0.5000	0.5000	0.5000	0.4826	0.5000	0.4944	0.4828	0.4399	0.4833	0.5000	0.4929	0.4915	0.5119	0.4937	0.4052	0.4014	0.4569	0.4846	0.4988	0.5000

Note. Source: U.S. Bureau of the Census, American Community Survey, 2008-2012.

< 0.35	Lowly Segregated
> 0.50	Moderately Segregated
> 0.75	Highly Segregated

Table 3.4 Index of Dissimilarity (ID) of Foreign-born Population by Region with Native Black Population at County Level

County	EAfrica	MidAfrica	NAfrica	WAfrica	SAfrica	CAsia	EAsia	SE_Asia	SAsia	WAsia	EEurope	NEurope	SEurope	WEurope	Caribbean	CAmerica	SAmerica	NAmerica	Aus_NZ	Ocean
Barrow County	0.5000	0.5000	0.5000	0.4889	0.5000	0.5000	0.4839	0.4204	0.4789	0.5000	0.4717	0.4895	0.4956	0.4921	0.4707	0.3778	0.4228	0.4983	0.5000	0.5000
Bartow County	0.5000	0.5000	0.4984	0.4976	0.5000	0.4984	0.4789	0.4913	0.4771	0.5000	0.4954	0.4933	0.4977	0.4904	0.4871	0.4126	0.4752	0.5015	0.5000	0.4991
Butts County	0.5000	0.5000	0.5000	0.4810	0.5000	0.5000	0.4993	0.4915	0.3782	0.5000	0.5000	0.4592	0.5000	0.4965	0.4789	0.3141	0.4113	0.5000	0.5000	0.5000
Carroll County	0.5000	0.4980	0.5000	0.4785	0.5000	0.5000	0.4822	0.4837	0.4744	0.4959	0.4867	0.4833	0.4874	0.4883	0.4745	0.4831	0.4889	0.4947	0.5000	0.5000
Cherokee County	0.4934	0.4998	0.4958	0.4901	0.4939	0.4981	0.4817	0.4763	0.4670	0.4970	0.4718	0.4735	0.4947	0.4828	0.4782	0.3772	0.4440	0.4838	0.4998	0.5000
Clayton County	0.4980	0.4997	0.4991	0.4629	0.4997	0.4988	0.4919	0.4104	0.4854	0.4980	0.4986	0.4956	0.4995	0.4967	0.4251	0.3634	0.4905	0.4993	0.5000	0.5000
Cobb County	0.4828	0.4968	0.4987	0.4778	0.4962	0.4998	0.4714	0.4766	0.4624	0.4921	0.4868	0.4868	0.4951	0.4893	0.4547	0.4178	0.4609	0.4898	0.4995	0.4997
Coweta County	0.4983	0.5000	0.4991	0.4986	0.4853	0.5000	0.4805	0.4715	0.4796	0.4935	0.4776	0.4763	0.4928	0.4549	0.4665	0.4936	0.4736	0.4856	0.4994	0.5000
Dawson County	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.4899	0.4555	0.5000	0.5190	0.5225	0.4988	0.5000	0.5350	0.5071	0.6032	0.5267	0.5089	0.5036	0.5000
DeKalb County	0.4848	0.4993	0.4953	0.4814	0.4975	0.4994	0.4750	0.4870	0.4709	0.4923	0.4924	0.4905	0.4972	0.4943	0.4577	0.5056	0.4769	0.4950	0.4990	0.5000
Douglas County	0.4981	0.4941	0.4997	0.4437	0.4992	0.5000	0.4832	0.4786	0.4856	0.4994	0.4834	0.4914	0.4977	0.4931	0.4130	0.4086	0.4765	0.4916	0.5000	0.4994
Fayette County	0.4904	0.5000	0.4965	0.4845	0.4990	0.5000	0.4439	0.4650	0.4489	0.4914	0.4925	0.4730	0.4933	0.4642	0.4584	0.4105	0.4824	0.4785	0.4984	0.5000
Forsyth County	0.4981	0.4998	0.5015	0.4979	0.5067	0.4996	0.4984	0.4964	0.5081	0.5017	0.4878	0.4929	0.4944	0.4966	0.4965	0.5019	0.5004	0.4993	0.4989	0.5000
Fulton County	0.4955	0.4968	0.4959	0.4875	0.4953	0.4975	0.4863	0.4855	0.4694	0.4872	0.4829	0.4845	0.4938	0.4862	0.4778	0.4781	0.4709	0.4894	0.4981	0.4994
Gwinnett County	0.4888	0.4986	0.4985	0.4811	0.4988	0.4998	0.4614	0.4564	0.4555	0.4956	0.4843	0.4930	0.4885	0.4959	0.4568	0.3830	0.4613	0.4958	0.4994	0.4998
Haralson County	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.4340	0.4280	0.4518	0.5000	0.5000	0.4569	0.5000	0.3680	0.4810	0.4089	0.5000	0.5000	0.5000	0.5000
Heard County	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.4891	0.5000	0.5000	0.9769	0.5000	0.5000	0.5000	0.5000	0.3571	0.4286	0.5000	0.5000	0.5000
Henry County	0.4848	0.4974	0.4942	0.4692	0.5000	0.5000	0.4778	0.4367	0.4358	0.5000	0.4909	0.4932	0.4959	0.4798	0.3792	0.4405	0.4689	0.4864	0.4990	0.5000
Jasper County	0.5000	0.5000	0.5000	0.4905	0.5000	0.5000	0.5000	0.4610	0.5000	0.5000	0.5000	0.5000	0.5000	0.4208	0.4397	0.1950	0.4929	0.5000	0.5000	0.5000
Lamar County	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.4603	0.3986	0.5000	0.5000	0.4785	0.4586	0.5000	0.4619	0.4752	0.3411	0.4868	0.4553	0.5000	0.5000
Meriwether Count	0.4790	0.4545	0.5000	0.5000	0.5000	0.5000	0.4510	0.5000	0.4755	0.4301	0.4825	0.5000	0.5000	0.5000	0.3799	0.4615	0.5000	0.4895	0.5000	0.5000
Morgan County	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.4922	0.5000	0.4860	0.5000	0.4455	0.4735	0.5000	0.5000	0.6616	0.4283	0.4985	0.4658	0.5000	0.5000
Newton County	0.4847	0.4976	0.4964	0.4860	0.5000	0.5000	0.4904	0.4737	0.4875	0.5000	0.4826	0.4922	0.4888	0.4741	0.4498	0.4446	0.4653	0.4861	0.4989	0.5000
Paulding County	0.4747	0.4992	0.4982	0.4748	0.4985	0.5000	0.4617	0.4839	0.4773	0.4941	0.4827	0.4737	0.4873	0.4902	0.4094	0.4002	0.4549	0.4943	0.5000	0.5000
Pickens County	0.5000	0.5000	0.4510	0.5000	0.4957	0.5000	0.4657	0.4908	0.5530	0.5000	0.4975	0.4473	0.5000	0.4706	0.4835	0.6014	0.5000	0.4926	0.5000	0.5000
Pike County	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.4843	0.4817	0.4110	0.5000	0.4607	0.3901	0.4712	0.4843	0.5000	0.3770	0.4555	0.4555	0.5000	0.5000
Rockdale County	0.4910	0.4977	0.4987	0.4837	0.5000	0.5000	0.4924	0.4775	0.4718	0.4962	0.4859	0.4941	0.4991	0.4922	0.4005	0.4832	0.4687	0.4938	0.4996	0.5000
Spalding County	0.4921	0.5000	0.5000	0.5000	0.4924	0.5000	0.4635	0.4813	0.4453	0.4956	0.4991	0.4626	0.5000	0.4804	0.4684	0.4730	0.4886	0.4871	0.5000	0.5000
Walton County	0.5000	0.5000	0.5000	0.4826	0.5000	0.4944	0.4828	0.4694	0.4875	0.5000	0.4929	0.4915	0.5554	0.4937	0.4415	0.4206	0.4609	0.4846	0.4988	0.5000

Note. Source: U.S. Bureau of the Census, American Community Survey, 2008-2012.

< 0.35	Lowly Segregated
> 0.50	Moderately Segregated
> 0.75	Highly Segregated

By viewing data of racial-ethnic segregation from the tables that I analyzed, I can say that segregation is low in most counties in the Atlanta MSA. Table 3.2 show lots of value 0.50 of ID which confirms that in Atlanta-Sandy Spring-Roswell Metropolitan Area has in general low class level of segregation of foreign-born population by origin of

region with native White population. These patterns are on the rise and enable a gap of income inequality among the population, including immigrants—a new trend that appears in the American landscape (Massey et al., 2009).

3.5.5 Location Quotient of Foreign-born Population in Atlanta MSA

To show segregation at the census tract level, the location quotient analysis is presented by examining each local area's relative share of foreign-born population compared to their average representation in the entire MSA. I calculated the top 20 census tracts of highest foreign population by regions to discover some of the characteristics of immigrants' segregation in the Atlanta MSA. Segregation was shown by using LQ and percentage of foreign-born population.

The location quotient was calculated using the census tracts of Atlanta MSA's 29 counties, totaling 951 census tracts, and the data are separately shown in five categories (Table 5). For convenience of comparison, I divided the three distributions of LQ values at five levels: less than =< 0.25, second level between 0.26 and 0.75, third level between 0.76 and 1.25, fourth level between 1.26 and 1.75, and lastly greater than or equal to 1.76. If LQ =< 0.25, segregation is under representative or there is no segregation; this value represents an area where the percentage of the foreign-born residents is below that of the Atlanta MSA as a whole. The second result of LQ = 0.26-0.75 represents an area where a smaller share (segregation near representative) of foreign-born residents than that of the MSA average exists. The third LQ=0.76- 1.25 implies places with an equal percentage (equal representative). The segregation starts to increase in the fourth LQ= 1.26-1.75

which shows higher value (segregation near over representative) of foreign-born population than that of the Atlanta MSA average. Lastly, fifth level LQ =1.76> depicts the highest value (segregation, over represented) of foreign-born population.

The testing of the LQ answers the research questions whether the distribution of foreign-born population is highly segregated in some tracts or less segregated in other tracts. The LQ values also explain which tracts have the highest concentration of diversity of population. In this test of data aggregation levels, I compute the location quotient to examine each local area by census tract relative to shared populations of three categories: foreign-born populations within native-born population, non-citizen population within citizen population, and foreign-born populations by region and by continents within native-born population. (Table 3.5) shows the number of tracts and each category's percentage of total census tracts using the 5 levels of the location quotient.

3.5.6 Location Quotient of Foreign-born within Native-born Population

In this analysis (Table 3.5) shows that most of the Atlanta MSA is segregated with an LQ of <0.25 (under-representation). This level of segregation counts 724 counties around the entire MSA, 76.14% from all tracts. The segregation of near-represented falls between 0.26-0.75 LQ, and makes up 168 tracts, which equals 18% of tracts from the Atlanta MSA. The equally represented LQ of 0.76-1.25 includes 30 tracts, which equal 3% all tracts. The spatial distribution of location quotient foreign-born population in Table 3.5 shows that scores of LQ = > 1.76 implies places with a higher

percentage (over-representation) of foreign-born population than that of the Atlanta MSA average. This equals 0.21% of the foreign- born population in a census tract, which is lowest representation than all of Atlanta MSA average. The higher LQs, which are above 1.76, include 2 census tracts located in DeKalb County.

Near over-represented location quotient values average between 1.26 -1.75 and consisted of 10 tracts (1.08% of all tracts). These include the following: 2 tracts located in Gwinnett County, 2 tracts in DeKalb County, 2 tracts in Henry County, 2 tracts in Fayette County, one tract in Douglas County, and one tract in Coweta County. All of these near overrepresented tracts were encircling tracts with over-represented LQs.

3.5.7 Location Quotient of Citizen and Non-citizen Populations by Census Tract

In this section, Table 3.5 tells us how the distribution of foreign-born, citizen, and non-citizen populations relate to each other spatially. The use of a GIS tool provides more evidence about location choices based on data and calculations as seen in Table 3.5 that includes the location quotient for citizen and non-citizen populations. For example, in the first level the location quotient between citizen and non-citizen by tracts is <0.25; under represented tracts equals 0.42% of all tracts. 26% of tracts are in the second level LQ (0.26-0.75), or near represented equaling 26%. 14 tracts =30% in the third level (LQ 0.76-1.25; equally represented). 0.21% of tracts had an LQ equal to or great than 1.76 (over represented). Splitting the LQ values into 5 levels shows a more detailed of segregation between foreign-born and native-born populations.

Table 3.5 Location Quotient of Foreign-born Population within Native-born Population and Location Quotient of Citizen and Non-citizen Populations by Census Tract

Location Quotient Level	Location Quotient of Foreign-born within native-born Population		Location Quotient of Citizen vs. Non-citizen Population	
	Number of Tracts	As % of the Total	Number of Tracts	As % of the Total
No Foreign-Born Population	14	1.5	4	0.42
<0.25 Segregated, Under Represented	724	76.14	249	26.18
0.26-0.75 Segregated, Near Represented	168	17.67	315	33.12
0.76-1.25 Equally Represented	30	3.19	136	14.30
1.26-1.75 Segregated, Near Over Represented	10	1.08	68	7.16
1.76> Segregated, Over Represented	2	0.21	175	18.40
Missing Data	2	0.21	4	0.42
Total	951	100.00	951	100.0

Note. Source: U.S. Bureau of the Census, American Community Survey, 2008-2012.

3.5.8 The 20 Census Tracts with Highest Location Quotient and 20 Census Tracts with Lowest Location Quotient of Foreign-born by Region of Origin

In this part of analysis, I calculated the highest and lowest location quotient values, to understand more about the segregation of foreign-born populations of regional origins by county in Atlanta MSA (Tables 3.6 and 3.7) specifically identifies the census tracts that are influenced by a concentration of foreign-born populations from different

regions of origin. Table 3.6 show that foreign-born populations from Australia and New Zealand are a highly-segregated group (location quotient 319.765) in a census tract of Forsyth County and in a census tract located in Fulton County (a suburban area), with a LQ value of 275.1978. There are some overlaps shown in some census tracts; however, Fulton County shows the segregation of different groups in 11 tracts in all five groups present in this table, which explains that segregation can be more apparent in suburban areas as many studies find it. The second highest LQ is by foreign-born populations from central Asia in a census tract that located in the Walton County.

Table 3.6 also shows that people from Central and South America are less segregated compared with other groups, and they are mostly easy to mix with native-born populations, even if there are some tracts that show segregation by these groups. Table 3.7 shows the lowest location quotient of 0.031787 in a census tract (117130404) located in Forsyth County (in the north east of the Atlanta MSA) for foreign-born population from Caribbean.

Table 3.6 Top 20 Census Tracts with Highest Location Quotient of Foreign-born Population by Region of Origin

Mid Africa						
COUNTYFP	County	TRACTCE	Region	Total FB	LQ	Rank
121	Fulton	10208	235	631	82.2809	14
121	Fulton	10507	152	378	88.8408	12
121	Fulton	2500	55	81	150.016	8
North Africa						
89	DeKalb	21502	266	694	65.7854	20
121	Fulton	7002	66	147	77.0609	16
89	DeKalb	23602	21	41	87.9109	13
227	Pickens	50600	69	105	112.789	10
227	Pickens	50400	11	11	171.636	6
South Africa						
121	Fulton	8500	14	27	81.585	15
77	Coweta	170406	69	116	93.5916	11
Central Asia** some overlap						
63	Clayton	40411	97	691	71.6406	19
297	Walton	110800	17	121	71.7016	18
121	Fulton	11617	344	963	182.305	5
297	Walton	110603	25	44	289.97	2
Australia/New Zealand** some overlap						
121	Fulton	2100	37	256	76.1205	17
121	Fulton	10107	41	187	115.474	9
121	Fulton	9502	16	54	156.051	7
121	Fulton	6601	5	12	219.447	4
121	Fulton	400	58	111	275.198	3
117	Forsyth	130503	34	56	319.765	1

Note. Source: U.S. Bureau of the Census, American Community Survey, 2008-2012.

Table 3.7 The 20 Census Tracts with Lowest Location Quotient of Foreign-born Population by Region of Origin

East Africa						
COUNTYFP	County	TRACTC	Region	Total FB	LQ	Rank
121	Fulton	11405	2	2883	0.021752	14
135	Gwinnett	50435	1	1403	0.022349	13
East Asia						
89	DeKalb	23209	1	544	0.020505	16
67	Cobb	31405	5	1828	0.030511	5
Southeast Asia						
121	Fulton	11619	7	2938	0.030616	4
Northern Europe						
121	Fulton	10123	1	1330	0.029878	6
Caribbean						
121	Fulton	9200	1	822	0.010833	18
121	Fulton	1002	2	1139	0.015636	17
57	Cherokee	90400	6	2072	0.025786	9
13	Barrow	180107	1	313	0.02845	8
13	Barrow	180203	2	540	0.032981	1
Central America						
117	Forsyth	130612	1	517	0.005752	20
89	DeKalb	22402	7	1096	0.018994	19
135	Gwinnett	50530	9	1277	0.020959	15
117	Forsyth	130609	7	873	0.023845	12
121	Fulton	11623	29	3533	0.02441	11
121	Fulton	9102	5	584	0.025461	10
121	Fulton	11622	35	3351	0.031061	3
117	Forsyth	130404	9	842	0.031787	2
South America						
121	Fulton	10212	4	1866	0.028866	7

Note. Source: U.S. Bureau of the Census, American Community Survey, 2008-2012.

3.6 Conclusion

This research provides an overview of and addresses three logically connected research questions. First, this research addresses whether an area that has foreign-born

population will be influenced by place of birth locations, immigrants' status, cultural, and regional background. The research found that the place of birth influence home choice, as foreign-born populations tend to live near people from their country so they can easily access help from them and find employment, while the cultural influence will be higher for those residents who select specific areas to live in. Second, the immigrants' segregation patt1erns can be high value or low value between immigrant groups' between specific regions, such as segregation between Asian immigrants' vs African Immigrants. Third, minority immigrants will experience patterns that suggest segregation from native-born populations, and some counties are more segregated and aggregated than others, as shown by using index of dissimilarity in the Atlanta MSA to measure segregation.

I have used two tests to analyze immigrants' aggregation and segregation in the Atlanta MSA. This way of analysis uses the geographic methods of location quotient of foreign-born, and index of dissimilarity of foreign-born population. This research provides a comprehensive view of segregation patterns of different immigrant groups at different geographic scales: at metropolitan, county, and census tract levels, for foreign-born populations versus White and Black; western and non-western countries; and developed and non-developed countries. I saw strong patterns of segregation in Atlanta city proper. These findings also show that there are counties with high segregation levels, such as Gwinnett County for White, and Fulton County for Black. These findings are important to understand the relationship between housing locations and the fact that all foreign-born population groups can cluster for many reasons,

depending on their use of the American lifestyle, and their link with their home culture. I believe more analysis of the economic status of foreign-born populations would add to the analysis of level of segregation in each census tract. These are some overlapping LQs that are shown in some census tracts; the highest group segregated by LQ is foreign-born populations from Australia and New Zealand, with location quotient 319.765 in Forsyth County in northeast. In addition, a census tract located in Fulton County within the suburban area has a LQ value of 275.1978, highest for the Atlanta MSA. On the other side, the lowest location quotient is 0.032981 (for those from the Caribbean) in a census tract that located in Barrow County (in the north east the Atlanta MSA).

The study shows that new residential patterns of foreign-born populations are found in suburban areas, which increases the degree of LQ; this influences immigrant populations and gives an idea of their location depending on their origin of countries and regions. In addition, the study encouraged me to analyze the economic status of those groups in each census tracts to give a deeper understanding about the locations patterns. The income inequality connected with other factors such as education, English skills, and job opportunities will be discussed in the next chapter.

CHAPTER IV

DEMOGRAPHIC AND HOUSING CHARACTERISTICS OF FOREIGN-BORN POPULATIONS IN SEGREGATED VS. NON-SEGREGATED CENSUS TRACTS IN THE ATLANTA METROPOLITAN STATISTICAL AREA[3]

4.1 Introduction

Inequality among different race and ethnic groups is an important topic that scholars are currently studying (e.g., Holmes and Berube, 2016). The United States has a relatively high level of inequality among its population groups. Its income inequality gap is classic: the very richest people have the largest slice of its economic pie, and there is a relatively wide gap between them and the poorest of America's population. This gap, which was 14.5% in 1970, rose to a high of 36.8% in 2010. The rise of immigrant populations, especially of undocumented immigrants, has contributed to this trend (Martin, 2013). Though there are other variations of inequality, some economists believe that "wealth inequality" is a better measure of what is happening in the United States. More widely, another term for this is "economic inequality," which some prefer since super-rich people are such a distinct income group, not just one based one wealth (Sutter, 2013).

[3] Altaher, Arwa. 2017. To be resubmitted to *Southeastern Geographer.*

The term “economic inequality” is useful in this study because it emphasizes the broader patterns of an immigrant’s life, which depend not only on income, but also on education level, proficiency in English, and employability. Each of these factors is critical to visualizing a comprehensive map of economic inequality in the United States. In the Atlanta MSA, the study area for this research, economic inequality varies across the region because of these factors. Such variations have an increasing influence on the foreign-born population. Many studies assume that understanding immigrant median income inequality is important, but that it cannot be separated from understanding the broader assimilation process. For example, policies designed to enhance English-language proficiency may yield heterogeneous socioeconomic outcomes along the ethnic, gender, and income class dimensions (Mora and Da´vila, 2006). Broad patterns of social factors have economic implications for immigrants. In this research, I extended the inequality literature by documenting the inequalities among immigrants in the Atlanta MSA by analysis different characteristics of households such as wages, median income, English language proficiency, Education level, transportation, and poverty, by comparing them with Native American characteristics.

4.2 Prior Research on Residential Location Pattern of Immigrants

The following section focus immigrants’ inequality, wages, English language proficiency, Education level.

4.2.1 Immigrants and Inequality

Previous research shows that the increase of foreign-born populations has been symmetrical to the increase of income inequalities among the general population, specifically among immigrants. Income inequality has fluctuated since 1929, depending on population groups, education, age and gender (Levy and Murnane, 1992; Acemoglu, 2002). The history of economic gaps in general in the United States is messy: when considering all people, note that in the 1940s, the economic situations gap between genders became apparent, as Black females had a higher rate of labor force participation when compared to White females, but with lower wages. However, in the 1960s, despite the Civil Rights Movement, more White males and females obtained jobs than Black males and females. The income and employment gap between the different groups of population continued to grow. As immigrants' influx increased, the wage gap between native- born and foreign-born populations became obvious.

Although the government has minimum wage and employment discrimination policies, the government has not put into place policies which to help reduce this economic gap. Therefore, unless new policies, strategies, investments, and business models are introduced, the gap of inequality will continue to grow (Waters and Eschbach, 1995). Most recent studies on U.S. income inequality focus on inequality between immigrants and U.S. citizens, particularly in some of the country's larger cities, such as Chicago, New York, Los Angeles, and San Francisco (Berube, 2014).

This study has shown that a higher level of income is connected with good health, a high level of education, and a developed social community. On the other hand, poverty negatively affects immigrants in the early arrival stage of a host society in different ways, such as choosing poor housing, which prevents them from developing skillsets that will help them navigate in their new environment. In addition, poverty limits the jobs for immigrants who have low skills, which leads to the marginalization of income distribution and inequality of socioeconomic status among people who live in specific areas.

4.2.2 Wages and Income Inequality

A study by Visser and Meléndez (2015) examined the factors that influence the likelihood of engaging in low-wage work during the recessionary and post-recessionary era. They examined human capital, and structural and labor market characteristics that induce workers' participation into low-wage jobs and labor markets. They also studied how these factors vary both between and within various ethnic, racial, age, and gender groups, including Hispanic/Latinos. They found that the reasons why people end up in low-wage employment are largely the same as those found in pre-recessionary studies and analyses. However, ethnicity, race, gender, and age affect the situation, which may cause specific groups of workers to end up in low-wage employment.

In addition, a study by Ping Xu et al (2015), which used data from American states from 1998-2008, gave an overview of the relationship between immigration and

inequality. The study focused on comparisons throughout cities in the U.S. by understanding the connection between immigration and wage inequality. State-level income inequality is positively related to levels of foreign-born population; this, in turn, is connected to levels of low-skill immigrants, which pull down income inequality overall. The study concluded that immigrants with low-level job skills have an important effect on income inequality in the American states. These results showed the influence of recent immigrants on the relative wages of people in the U.S. in general (Ping Xu et al, 2015). The impacts on wage inequality for foreign-born populations are larger, as reflected by the location concentration of immigrants, their jobs, and skills distribution and inequality. Wage inequality is influenced by political and economic determinants of inequality, which made immigration one of the most controversial social issues. However, immigrant-receiving countries (like the U.S.) may experience a positive impact on wage inequality (Ping Xu et al., 2015).

A study by Hoover and Yaya (2010) examined different levels of inequality among immigrants in the United States when it comes to income, gender, and time of stay. This study used data from the 2006 American Community Survey (ACS). This work focused on income inequality between males and females by using several different measurements. Hoover and Yaya (2010) showed that males have an inverse relationship between inequality and growth but females have the opposite; this was based on the level of their work (low-skill or high-skill). In addition, they examined how income inequality differs between immigrants who have been in the U.S. for a decade

and those who are newcomers. They found that income inequality is much higher for new immigrants when compared with immigrants who have been living for a longer period in the U.S. This study explains that being in the U.S. longer decreases inequality among immigrant groups, which is influenced by gender, culture, and by the number of total immigrants who participate in labor force.

4.2.3 English Language Proficiency, Education Level, and Inequality

The increase of immigrants to the United States in recent decades, much of it from non-English-speaking countries such as from South America, Asia, and Africa, has drawn attention to the role of English-language skills in immigrant employment and inequality (Birdsong, 2006). Mora and Da´vila (2000) focused on regression analysis of wage inequality, using 1990 and 2000 U.S. Census data. The study examined how Language-English Proficiency (LEP) and income inequality influence gender and Hispanic ethnicity groups. The study suggests that weakness of English language proficiency is linked with lower average labor market wages in the U.S. The study found that LEP-earnings fell significantly for Mexican-American men and women between 1990 and 2000. However, additional results suggested that this inequality increased for Cuban-American males and females. They also found that increasing trade services and ethnicity networks did not affect or benefit all LEP Hispanic populations.

Beckhusen et al. (2012) focused on immigrants' location choice for living and settlement and explained how immigrants' work in ethnic enclaves affects their English language proficiency. This study used data from the 2010 ACS to examine the impact

of housing location and workplace segregation on immigrants' ability to speak English. The idea of this study was to see how in the early history of the U.S, immigrants with weak English were affected by their communication, location and work; thus, they created ethnic enclaves. The relationship between segregation and English language proficiency among ethnic groups is different; Beckhusen et al. (2012) focused specifically on Mexican and Chinese immigrants. The results found that immigrants in the U.S. who choose housing and work among high concentrations of people from their country had lower proficiency in English than immigrants who live in that are not enclaves and work in low segregated areas. English language proficiency is an important factor influencing labor market opportunities.

Bleakley and Chin (2004) show some severe penalties in the U.S. labor market for English insufficiency, which increased immigrant chances of being hired at a lower wage. Immigrants' wages are greatly influenced by where they receive their education. People who get their degrees from U.S. have a higher chance of finding a job that fits their education, when compared with people who came with their degrees from a foreign country. Immigrants with a foreign degree will have lower chances of working in same specialization, and most of them will work in jobs that require low skills. Similarly, Duncan and Holtz (2008) presented that Hispanics who receive foreign schooling are paid less by employers when compared with people who were attending school in the U.S. In addition, English language proficiency influenced the immigrants' geographical concentration in choosing their housing and their jobs; most of time their

choices were dependent on English language skill, their level of education in general, and a tendency to live near people of their ethnicity (especially when they first arrive to the United States).

Bartel and Koch (1991) explained that highly educated immigrants are less likely to live and locate in large congested population centers, as are immigrants who come from countries where English is a primary language. There is evidence that high English proficiency guides immigrants to integrate socially and economically into their new home, because English proficiency increases wages and reduces the wage gap between immigrants and native-born populations. Therefore, these factors benefited and encouraged immigrants with high English proficiency to get married to people who also have high English proficiency, a high level of education and higher incomes. This study confirmed that the relationship between English language proficiency and homeownership affected the immigrant's location choices and jobs. Bartel and Koch (1991) discussed that one of the most significant barriers to owning a home by recent immigrants is low English-language literacy, including speaking, reading and writing. The ability to speak English well gives immigrants access to information about buying a house. Also, the ability to speak the English language could improve outcomes for the labor market because all immigrants are looking to find better wage jobs, and this allows them to move out of ethnic clustering (clusters provide restricted opportunities, especially in first years of their arriving to U.S.).

There are gaps in the existing literature when it comes to thinking about immigrants and economic inequality. First, studies focus on income inequality in the U.S. in general. Second, few studies discussed and explained conditions in old metropolitan areas, which are located in the East and Northwest of the U.S. Scholars debate the magnitude of problems that resulted from income inequality at the level of metropolitan areas, but metropolitan areas in the Southern U.S. have not been specifically studied. In some studies, cities are shown with demographic characteristics, based on salary and job opportunity, in relation to English proficiency. Furthermore, studying inequality at a local scale is seen as unfavorable, because academic schools' performance, narrow tax bases, and public services (Berube and Holmes, 2016) influence a local scale. Researchers mainly focused on giving a general idea of income inequality, but did not give suggestions to resolve the problem. My study fills these gaps by providing a comparative analysis of inequality patterns among different immigrant groups compared to the native-born populations.

4.3 Research Questions

This dissertation seeks to add to the growing body of inequality literature related to an immigrant's demographic and housing conditions by exploring the following research questions:

1. How do socioeconomic and housing characteristics vary by immigrant populations living in segregated vs non-segregated neighborhoods?

2. How do demographic and housing characteristics vary among foreign-born, Native-born White and Native-born Black populations living in segregated vs non-segregated neighborhoods?
3. To what extent do these patterns suggest an income inequality between foreign-born vs. Native-born White vs. Native-born Black population?

Several outcomes are expected: (1) Median income will be higher in segregated census tracts where immigrants are underrepresented than segregated overrepresented foreign-born census tracts; (2) foreign-born populations with citizenship will live in higher income neighborhoods than non-citizen foreign-born; and (3) if an area has foreign-born populations, the demographic and housing characteristics will be influenced by the foreign-born group's economic status and their skills.

4.4 Research Design, Study Area, Data

4.4.1 Methods

The following section describes my research method which is location Quotient (LQ) in different characteristics.

4.4.2 Location Quotient (LQ)

In this paper, I use Location Quotient (LQ) to identify segregated census tracts at five levels:

- Under-represented foreign-born population census tracts: LQ < 0.25
- Near-represented foreign-born populations census tracts: LQ = 0.26-0.75

- Equally represented foreign-born populations census tracts LQ = 0.76-1.25
- Near over-represented foreign-born populations census tracts LQ=1.26-1.75
- Over-represented foreign-born populations census tracts LQ>=1.76

The calculation of LQ follows the same formula that I used in the third chapter:

$$LQ = (TBi/TPi) / (TBa/TPa),$$

where

TBi = Total number of Foreign-born (FB) residents in Census tract i,
TPi = Total residents Native-born (Black or White) in Census i,
TBa = Total number of Foreign-born (FB) residents in the county
TPa = Total residents Native-born (Black or White) in the county

I compared and evaluated the inequality based on immigrants' demographic and housing conditions including median income, median education levels, poverty, and the proficiency of English language in different categories. The housing conditions are measured by the percentage of housing without kitchen or heating. All these conditions imply immigrants' quality of life in the U.S.A.

4.4.3 Study Area

The 29 counties of the Atlanta Metropolitan Statistical Area (MSA), which is made up of 951 census tracts from the Southeastern part of the U.S., is used for this research (Figure 4.1). The Atlanta MSA was chosen because it is one of the largest urban

areas in the United States and has the second fastest growing foreign-born population among the nation's 20 largest metropolitan areas. Atlanta's immigrant population is higher than the national average of 13% (Metro Atlanta Profile, 2011). Atlanta has become as an international gateway for communities from diverse backgrounds, such as native-born Whites, native-born Blacks, and immigrants from international sources with different cultural and religious landscapes (Strait and Gong, 2015). The Atlanta MSA has been become the forefront of the Sunbelt's economic and population growth during the last few decades (Strait and Gong, 2015). Atlanta is the most business friendly American major city, and among the top ten American cities of the future (Metro Atlanta Profile, 2011). According to ACS 2013, the Atlanta MSA had a total population of 5,309,620; the foreign-born population accounted for 13.75 percent. It is expected that by 2020, the population for 29 counties will cross 6.4 million including an additional 1.25 million foreign-born populations.

However, in the early 20th century Atlanta was the first city in the United States with a comprehensive racial zoning plan when it was approved on April 10, 1922. Between the 1930s and 1960s, African Americans in Atlanta lobbied to expand their enclaves, but they ran up against White resistance (Bayor, 2000). The 'economic forces' also segregated Blacks from the new suburban job market and created two separate, but starkly unequal places (Beers and Hembree, 1987). In 1974, "Jackson strongly challenged White financial privilege, redistributing the wealth through that shrine to Atlanta's New South supremacy, the Hartsfield Atlanta International Airport"

(McWhorter, 2003). Given this racial segregation history in Atlanta, as well as thriving economy and diversity (Alvarez, 2016), Atlanta is a perfect laboratory to ask research questions that I proposed in this paper.

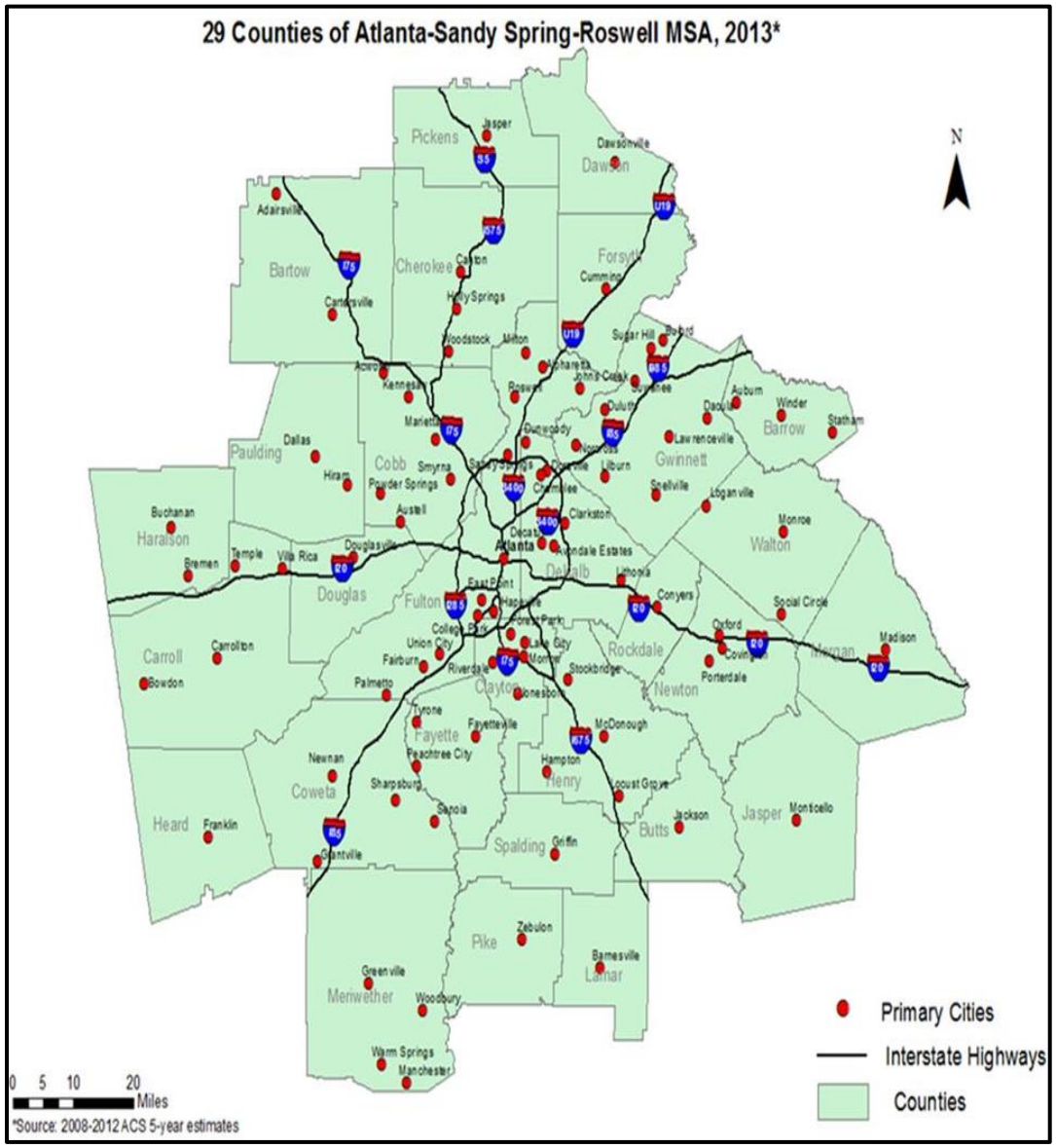

Figure 4.1. The Atlanta-Sandy Spring-Roswell Metropolitan Area, within 29 Counties, 2013. Source: U.S. Bureau of the Census, American Community Survey, 2008-2012.

4.4.4 Data

This study uses detailed housing and demographic characteristics data at census tract geographic level from the five-year estimations of the America Community Survey (ACS) data of 2008-2012. The 2013 ACS data includes variables that provide detailed demographic and socioeconomic characteristics of foreign-born populations at census tract levels including immigrants' origin of the country. Socio-economic demographics such as immigrants' level of education and proficiency in English language are also included housing variables such as median home value; the percentage of housing without kitchen, heating will be discussed. Additionally, the shapefiles for boundaries of 29 counties of the Atlanta MSA and census tract boundaries within these 29 counties were collected from Tiger census boundary files.

4.5 Results and Discussion

4.5.1 Location Quotient of Foreign-born vs. Native-White Populations in Atlanta MSA

This section identifies segregated census tracts between foreign-born vs. native-born White populations in the Atlanta MSA (Table 4.1 and Figure 4.2). I categorized segregated census tracts between foreign-born and native-born White populations into five categories. Those are based on LQ values: Under-represented foreign-born census tracts (LQ < 0.25); near-represented foreign-born census tracts (LQ = 0.26-0.75); equally represented foreign-born census tracts (LQ = 0.76-1.25); near over-represented foreign-born census tracts (LQ=1.26-1.75); over-represented foreign-born census tracts (LQ>=1.76) 288 census tracts (30% of census tracts in Atlanta MSA) were identified as

overrepresented foreign-born census tracts (LQ>=1.76). The core of this area expands all around Atlanta city and suburban areas that cover most of Gwinnett County, continuing to Forsyth County and Fulton County (Figure 4.2). There are 256 census tracts identified as near-represented foreign-born census tracts (LQ = 0.26-0.75), which accounts for 27% of total tracts in the Atlanta MSA. 190 census tracts (20%) are identified as underrepresented (LQ < 0.25) foreign-born populations and these census tracts are mostly located in exurb area of the Atlanta MSA. In other words, native-born whites (Figure 4.2) over represent in these areas.

Table 4.1. Location Quotient of Foreign-born vs. Native White Population

Location Quotient Level	Number of Tracts	As % of the Total
No Foreign-born Population	14	1%
<0.25 Segregated, Under Represented	190	20%
0.26-0.75 Segregated, Near Represented	254	27%
0.76-1.25 Equally Represented	12	12%
1.26-1.75 Segregated, Near Over Represented	77	8%
> 1.76 Segregated, Over Represented	288	30.4%
No Native White Population	10	1%
Missing Data	6	0.6%
Total	951	100%

Note. Source: Table calculated based on the U.S. Census 2013.

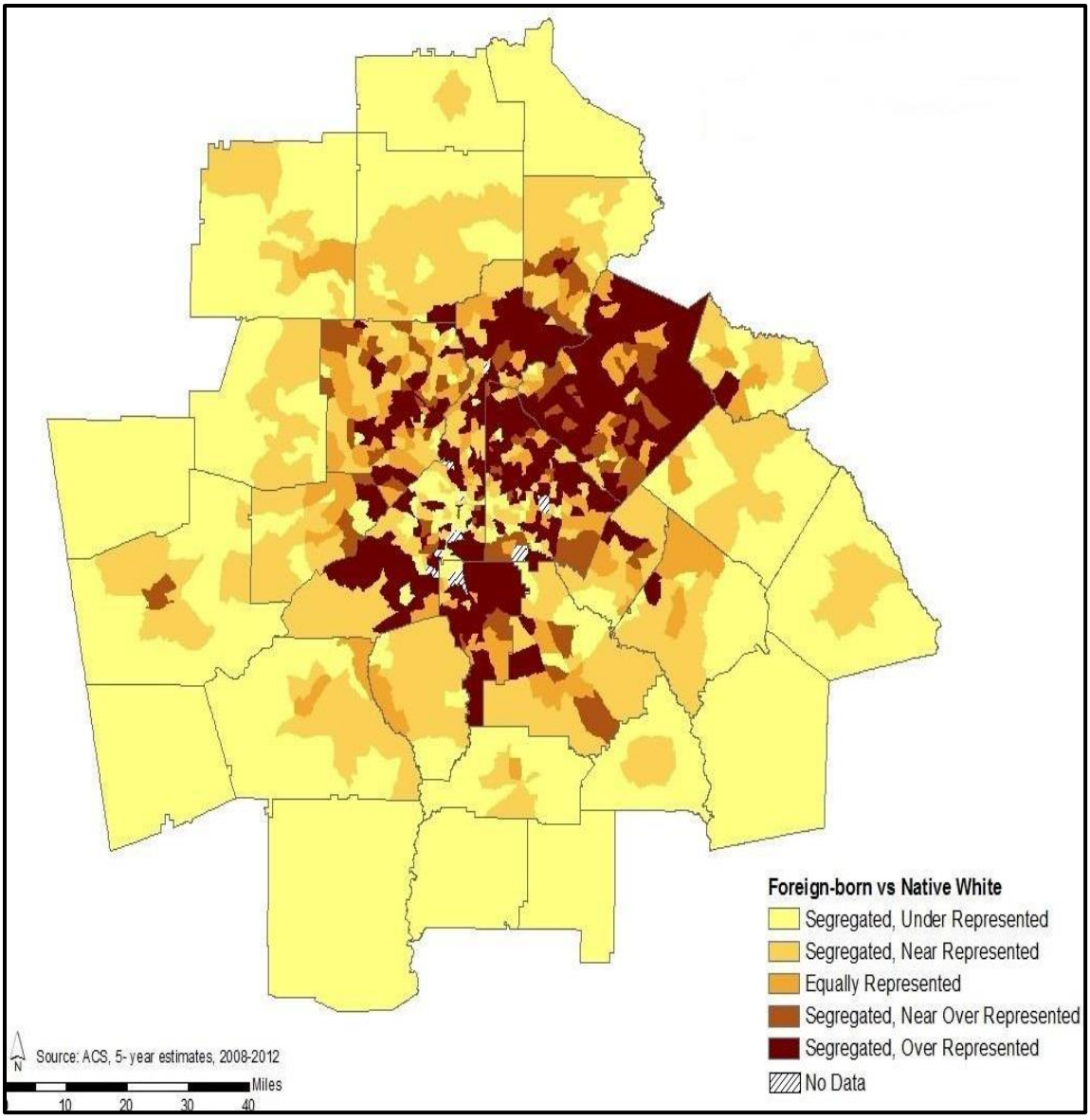

Figure 4.2. Location Quotient of Foreign-born vs. Native-born White Populations in Atlanta-Sandy Spring-Roswell Metropolitan Area, 2013. Source: U.S. Bureau of the Census, American Community Survey, 2008-2012.

4.5.2 Median Income and Median Education of Foreign-born Population in Atlanta MSA

To understand the inequality among foreign-born and native-White populations, socioeconomic characteristics of both population groups are analyzed. In Figure 4.3 is displayed the comparison of median income and median education by five-categories of segregation levels.

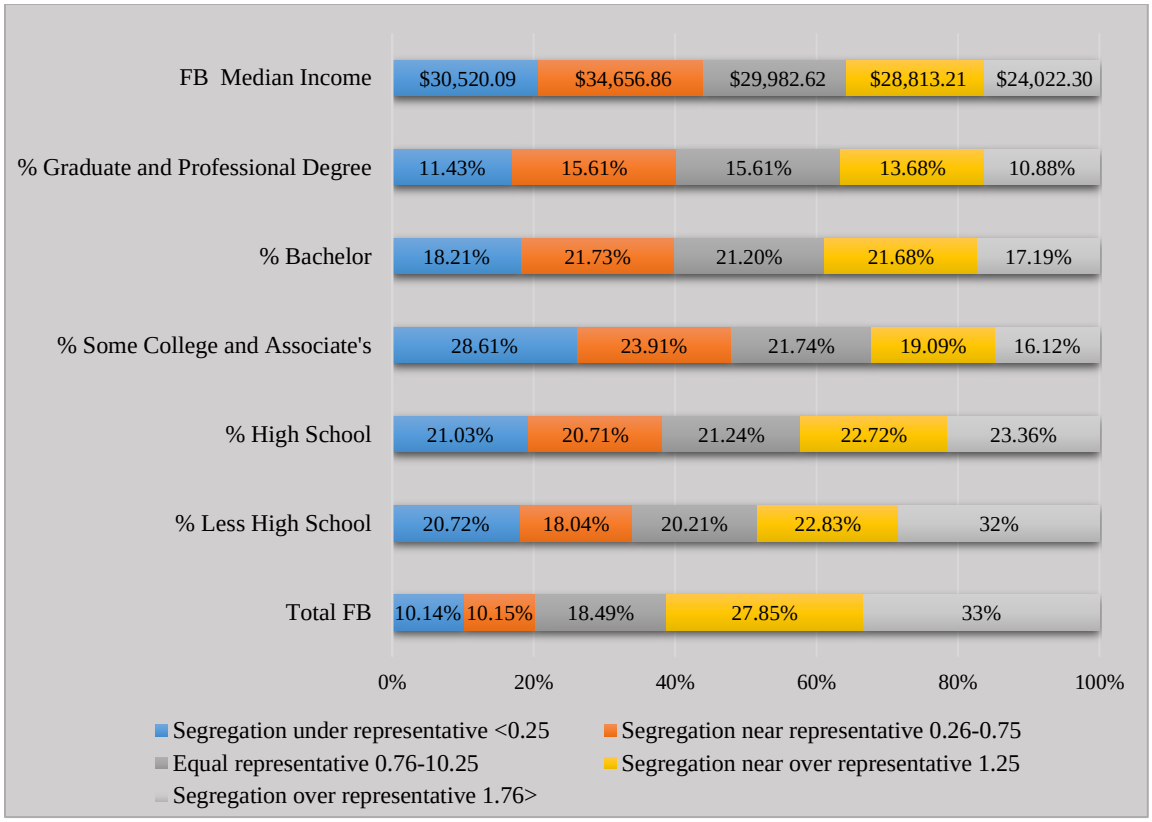

Figure 4.3. Percentage of Median Income and Median Education Atlanta-Sandy Spring-Roswell Metropolitan Area, 2013. Source: U.S. Bureau of the Census, American Community Survey 2008-2012.

First, segregated under-represented (LQ < 0.25) has a median income of $30,520. The foreign-born populations that have some college or an associate's degree are the largest groups (29%); the smallest group was undergraduate and professional degrees with 11%. The equally represented group (LQ = 0.76-1.25) ranges from 15-21% for educational attainment, with the total averaging 18%, and with a median income of $29,982. Under the same category, the education level is the lowest in graduate and professional level degrees (16%). The segregation over representative with the LQ value of > 1.76 implies that the foreign-born population who has less than a high school level education accounts for 32% of all total educated foreign-born population (with the average median income of $24,022). Thus, based on these results, its inferred that a low education level has a negative effect on the populations' socioeconomic status.

4.5.3 Poverty Characteristics of Foreign-born Population in Atlanta MSA

The section explains the economic status of different population groups at five-categories of segregation levels (Figure 4.4). The categories that are being compared are the following: for percent of people living below poverty, percent of foreign-born with less than a high school education, percent of foreign-born with lack of English language proficiency, percent of foreign-born without English speaking ability, percent of housing with no heating, and percent of housing with no kitchen. Results of the analysis show that people segregated in equal representative levels (LQ = 0.76-1.25) have the highest percentage (16%) of people living below the poverty line compared to the other groups of

segregation. The second highest percentage for people living below poverty is segregated near-represented with 14% (Figure 4.4).

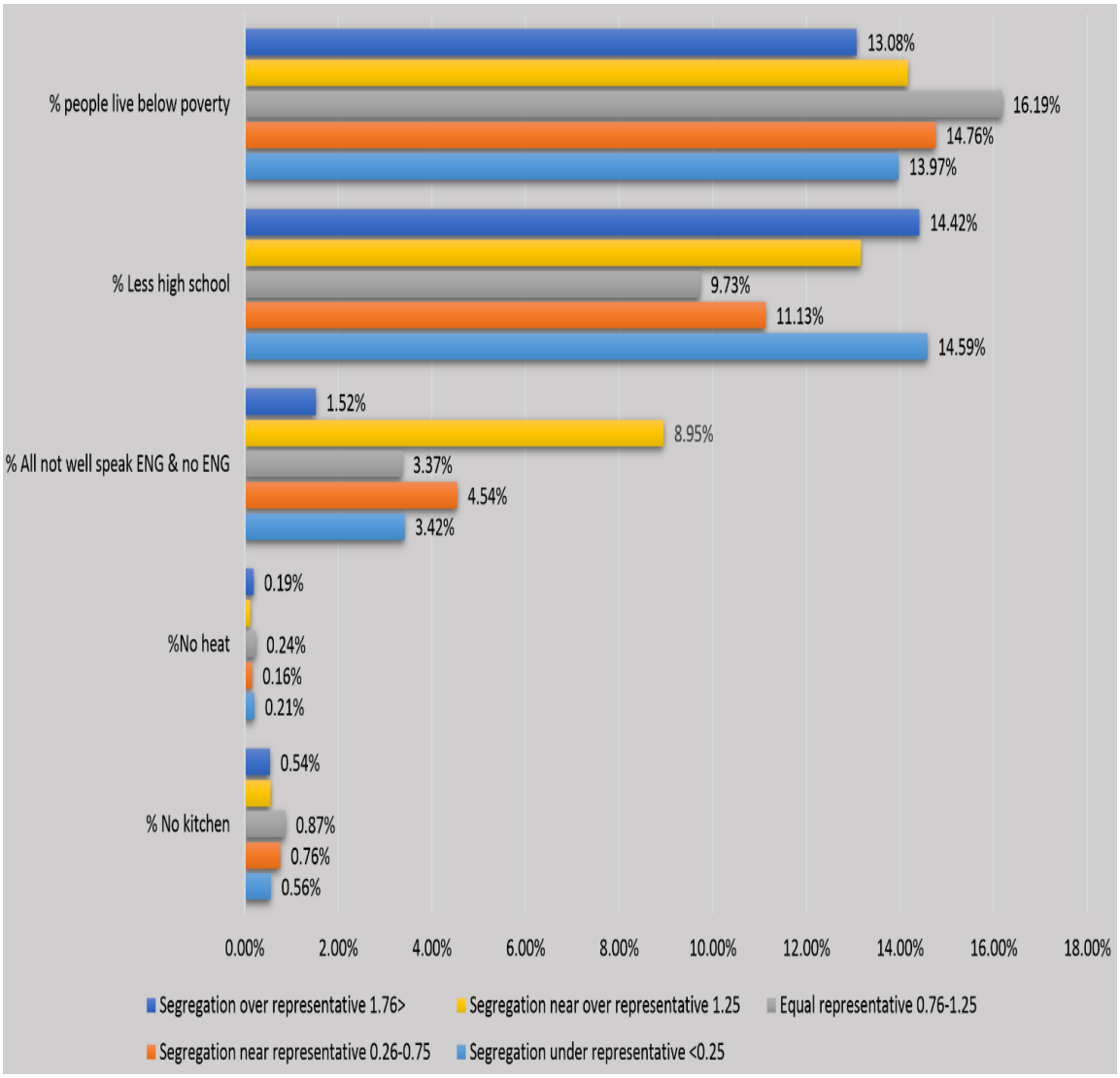

Figure 4.4. Percentage of Poverty Characteristics of Foreign-born Population Atlanta-Sandy Spring-Roswell Metropolitan Area, 2013. Source: U.S. Bureau of the Census, American Community Survey, 2008-2012.

Within the category of less than high school education, underrepresented and over-represented segregation levels both have the highest percentage of 15%. The results show that percentage of people who do not speak English well or speak no English at all, have the highest percentage (9%) in the near-over segregated group (LQ = 1.25-1.75). Thus, this again confirms that poverty levels are strongly linked with low level of education. On the other hand, foreign-born populations show small percentages with no heating and no kitchen across the board (0.24% and 0.87% respectively) in census tracts that have over-represented foreign-born population.

4.5.4 Proficiency of English Language of Foreign-born Population in Atlanta MSA

The improvement of socioeconomic status among immigrants in the United States is based on income, but the ability to speak English and knowledge of local areas gives them an ability to have a higher quality of life (Iceland and Scopilliti, 2008). In this section, I categorize foreign-born populations as follows: percent who only speak English, percent of all foreign-born who speak no English, percent of all foreign-born who speak English but not well, percent of all foreign-born who speak English well and percent of all foreign-born who speak English very well. (Figure 4.5) shows that the higher percentage of foreign-born populations who only speak English are shown in the segregated under-represented (LQ <0.25) census tracts, counting almost 39% from total foreign-born population. In other words, foreign-born populations who speak only English live in areas with predominantly white populations. The 38% of all the total foreign-born population speaks English very well and this group lives in equally-

represented segregated (LQ = 0.761.25) census tracts. This means that foreign-born populations speak very well in neighborhoods where both groups are mixed. The results suggest that 26% of foreign-born population who did not speak English lives in highly segregated neighborhoods with over-represented foreign-born populations (Figure 4.5).

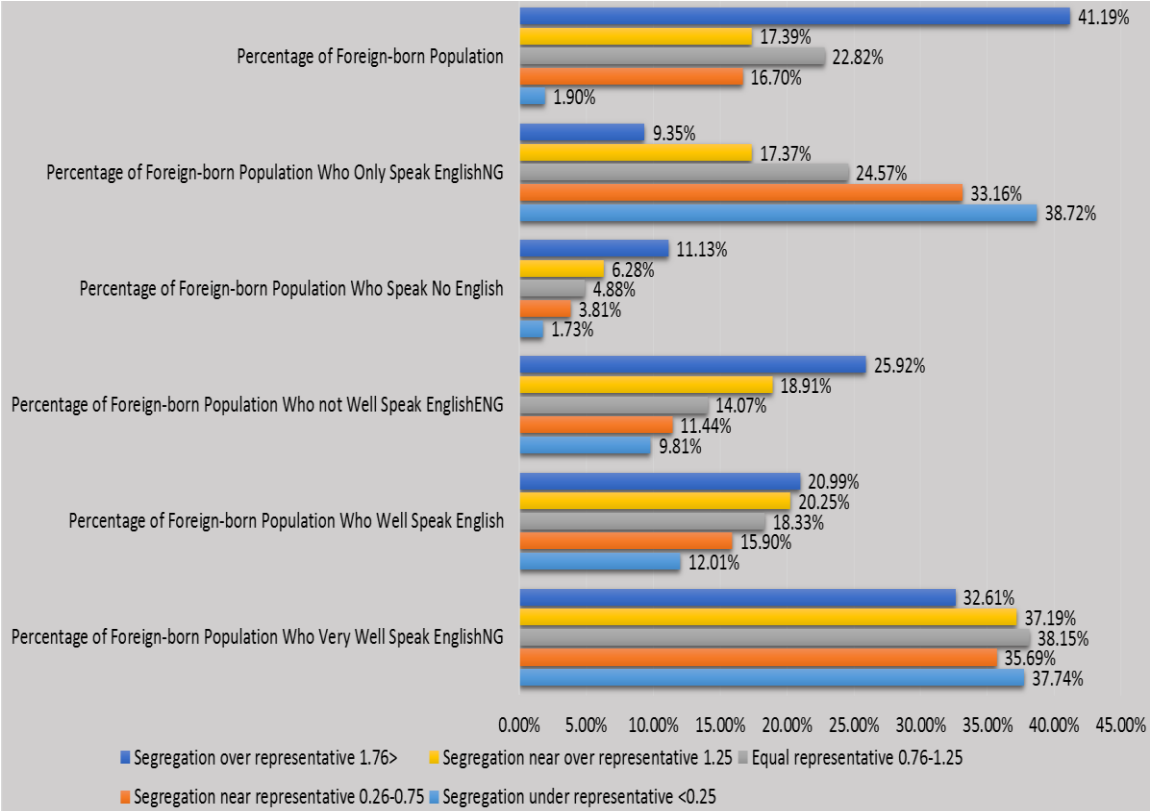

Figure 4.5. Percentage of Proficiency of English Language of Foreign-born Population in Atlanta-Sandy Spring-Roswell Metropolitan Area, 2013. Source: U.S. Bureau of the Census, American Community Survey 2008-2012.

These results of segregation levels reflect that proficiency in the English language is quite important to improving the foreign-born population location choices and decreasing segregation levels in the Atlanta MSA. Immigrants who came to the U.S.

well-prepared are faring better in housing market. On the other hand, foreign-born populations who do not speak well in English or not at all live in segregated neighborhoods with over represented foreign-born populations. Scholars emphasize that the concentration of non-English-speaking immigrants in similar residential locations helps preserve the ethnic language; however, it increases the use of the immigrants' first language, decreases their ability to learn English and their opportunity to obtain better jobs and assimilate with the American cultures (Espenshade and Fu, 1997).

4.5.5 Household Characteristics among Population in Atlanta MSA

Household characteristics and locations (such as living in a house or apartment, and having children or not) are linked with income segregation, because this reflects the economic and social status of populations. However, financial resources also influence residential location decisions, along with household preferences and affordable price options. In addition, the choices of households are influenced by whether the residential family has children; in this case, the size of housing is important to make housing location decisions, such as single-family homes, more bedrooms, or backyards. School quality is also a factor (Owens, 2016).

Location quotients were also determined for median and average household values, as well as the number of bedrooms reported. Results were based on the same level of segregation as applied earlier. The results show that houses with 3 bed rooms or less have a high value represented in all levels among segregated levels, except in the near overrepresented (LQ = 1.25-1.75) category, which has a median home value of

$217,278). For under-represented segregation levels, household median income equals $137,900. There are direct relationships between 3 bedroom units' size, household value, and median household value. Immigrants living in four bedroom houses are low in all levels of segregated census tracts, but average median Household value has highest value of $219,328 in equally represented census tracts. The majority of immigrants live in three-bedroom homes with the highest representation in the overrepresented segregated census tracts (79%).

In addition, the analysis shows that the three bedrooms presented same percentages in levels of segregations equal-represented and near-represented level (about 66%). The low percentages of four bedrooms equal 21%, and it is in the over-represented level. The results show that a population, which is prepared to relocate outside the major cities in the Atlanta MSA, which is unsegregated, will have options: they can own their property, or rent bigger houses, especially since there is no limitation of extending the suburban area, which makes the MSA less segregated over time.

4.5.6 Transportation Characteristics among Population in Atlanta MSA

Transportation systems are the first challenge that immigrants face when they arrive in a new place. They have to balance settling into a new society with choosing a good housing location that can provide job accessibility. They also face labor market conditions, which are critical factors for new immigrants' location choices (Kim, 2009). There is a strong relationship between transportation access and economic status for both native and the immigrants' populations, which with they live. A standard of living

provides significant evidence of immigrants and nonimmigrants' employment situations among all populations groups that live in an area (Blumenberg, 2008).

There are three characteristics indicated in this analysis (Figures 4.6): households without cars for total population, total foreign-born population transportation, and households of foreign-born population who drove alone to work. Those three elements give information about transportation situations in the Atlanta MSA. In all five levels of segregation, the results show that the total number of households without cars for all population groups is in the underrepresented level (LQ <0.25) is 632,673 which makes up 7% of all total population. All levels show close ratios of segregation levels but in the segregation over-represented level the results show the highest ratio, 8% of total population. For groups in over-representation (LQ > 1.75) census tracts, 18,231 total households live without a car; the percentage of those households in a census tract is almost two times the MSA average.

For public transportation, it shows in the under-represented, with 3% of the population (1,168 households). However, for over-represented tracts, there is a smaller share of total foreign-born public transportation residents than that of the MSA average. In addition, in this level of segregation the highest percentage is 6%. Although the population distribution is different in the levels of segregation, the percentages in the results are in close range of each other, which makes it important to understand the group population numbers (Figure 4.6).

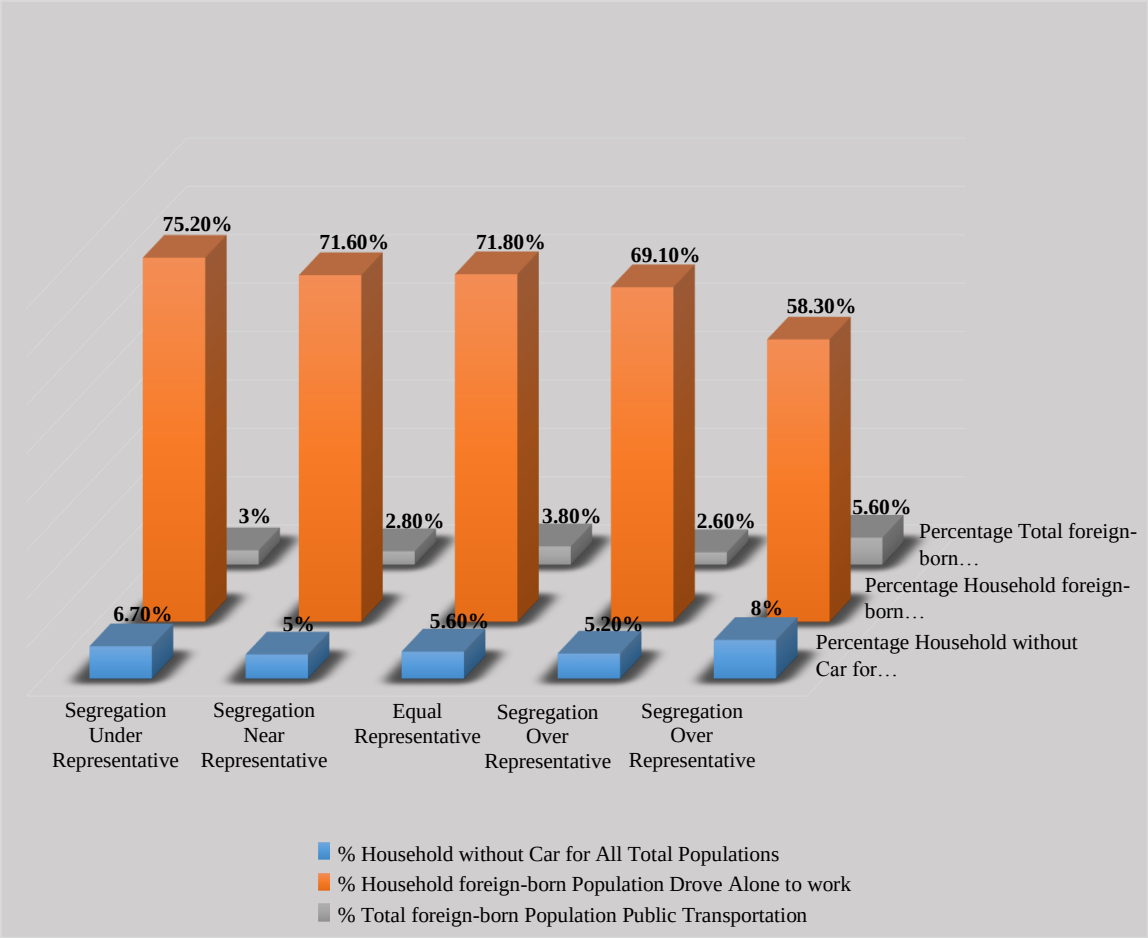

Figure 4.6. Percentage of Transportation Characteristics among Populations in Atlanta-Sandy Spring-Roswell Metropolitan Area, 2013. Source: U.S. Bureau of the Census, American Community Survey, 2008-2012.

The third characteristic that test results show is information about the households of foreign-born populations who drove alone to work. The highest percent represents an area where a smaller share (underrepresentation) of foreign-born residents drove alone to work than that of the MSA average. On the other hand, the lowest percent was in the over-representation band. For overrepresented, the percentage of foreign-born population

who drove alone to work for population in a census tract is almost two times the city average. The other levels of segregation range between 69-71%, even though the concentrations show that huge differences of numbers of population who live with this transportation status. These results indicate that foreign-born population depends on driving alone to work, which happens progressively. However, the results also indicate that foreign-born populations are more likely to use public transit compared with nonimmigrants.

4.6 Conclusion

In this research, I extended the inequality literature by documenting the inequalities among immigrants in the Atlanta MSA. Several characteristics of immigrant populations are compared to native-born Whites, such as demographic, socioeconomic status, English language ability, housing conditions, and transportation. These are based on five categories of LQ values: Under-represented foreign-born census tracts (LQ < 0.25); near-represented foreign-born census tracts (LQ = 0.26-0.75); equally represented foreign-born census tracts (LQ = 0.76-1.25); near over-represented foreign-born census tracts (LQ=1.26-1.75); over-represented foreign-born census tracts (LQ>=1.76) (Table 4.1). The segregation over representative with the LQ value of > 1.76 implies that the foreign-born population who has less high school level education accounts for 32% of all total educated foreign-born population (with the average median income of $24,022). Thus, based on these results, it is inferred that a low education level has a negative effect

on the populations' socioeconomic status, such as living in communities with high poverty and relying on public transit, compared to Native-Whites.

The results show that immigrants who only speak English live in neighborhoods with overrepresented native-born whites. Immigrants who speak English "very well" live in neighborhoods where both groups are equally represented. The results again confirm that well-educated and English-speaking immigrants are faring better in Atlanta MSA. This proficiency in the English language is quite important to improving the foreign-born population location choices and decreasing the segregation level in Atlanta MSA. Immigrants who came to the U.S.A well prepared are faring better in the housing market. On the other hand, foreign-born populations who do not speak English well or do not speak in English at all live in segregated neighborhoods with over represented foreign-born populations. The concentration of non-English-speaking immigrants in similar residential locations helps preserve the ethnic language; however, it increases the use of the immigrants' first language, decreases their ability to learn English and their opportunity to obtain better jobs and assimilate with the American cultures.

CHAPTER V

CONCLUSIONS

Given the fact that immigrants from developing countries will represent a crucial component of the future American cultures, all these implications can have profound effects on the future American urban landscape. It is therefore of great interest to urban and economic geographers to investigate immigrants' residential location patterns and how they vary by social mobility. This dissertation had three broad objectives: (1) to determine the geographic distributions of foreign-born populations as part of population growth processes in the Atlanta Metropolitan Statistical Area (MSA), (2) to analyze the magnitude of segregation among immigrant populations in the Atlanta metropolitan area, and (3) to evaluate the demographic and housing conditions of foreign-born populations in segregated vs. non-segregated census tracts in the Atlanta Metropolitan Area. Using the America Community Survey data of 2008-2012, this study investigated the diversity of immigrant populations and their housing locations in the Atlanta Metropolitan Statistical Area within 29 counties at the census tract level. Specifically, the research examined whether immigrants' countries, regions of origin, language, and socioeconomic factors influence the geographic distributions of foreign-born populations, which extends the current literature.

Additionally, this research determined whether these patterns suggest a pattern of segregation from native-born populations. The approaches included calculations of location quotients and indexes of dissimilarity and the use of a geographic information system to visualize the results. This study suggests that residential location patterns in Atlanta MSA depend on the national origin of the immigrants, which may be associated with the creation and growth of ethnic enclaves. As immigrants have become more geographically dispersed throughout the USA, there has been increasing scholarly interest in immigrant settlement patterns in new destinations outside of traditional gateways.

The results show that there are high segregation levels between Native-Whites and foreign-born populations such as in Gwinnett County, and between Native-Blacks and foreign-born populations, as in Fulton County. Meriwether County has the lowest foreign-born population and is the most segregated county in the Atlanta MSA. The 19% of the census tracts in Meriwether County do not have any foreign-born populations at all. Gwinnett and Fulton Counties have the highest foreign-born populations; however; immigrants live in highly segregated communities in both counties. Immigrants' area more segregated from Native-born White in Gwinnett County and from Native-born Black in Fulton County. Place of birth has an influence on immigrants' home locations at the census tract level; they tend to live near people from their own country. These patterns may imply that immigrants tend to get help from each other's (e.g., finding job and carpool).

The correlation coefficient of foreign-born population with jobs, education, and their proficiency of English shows alarming differences of relationships among different immigrant groups. Local jobs, farming, transportation and public administration seemed to have the weakest and non-significant relationship with total foreign-born population distribution, whereas a positive correlation exists with construction, retail trade and other service jobs. The construction jobs seem to have the highest relationship with the distribution of immigrants originated from Central America as well as South America (r=.226, r=.131, respectively). Language spoken by foreign-born population was shown to be highly correlated with the distribution of total foreign-born population. Education was shown to be strongly related to the distribution of total foreign-born population as well. While bachelor and graduate level education was shown to be strongly related to the distribution of population originating from East and South Asia, less than high school and high school levels of education were shown to have a very strong relationship with the distribution of foreign-born populations from the Central America.

This research provided a comprehensive view of segregation patterns of different immigrant groups at different geographic scales: at metropolitan, county, and census tract levels, for foreign-born populations versus White and Black; western and non-western countries; and developed and non-developed countries. There are strong patterns of segregation in the city of Atlanta. There are two census tracts in Fulton County where immigrants are mostly segregated from the native-whites. These two tracts have lowest Native-born population with 3% and 4%, respectively. These findings are important to

understand the relationship between housing locations and the fact that all foreign-born population groups can cluster for many reasons, depending on their use of the American lifestyle, and their link with their home culture. The segregation over representative with the LQ value of > 1.76 implies that the foreign-born population who has less high school level education accounts for 32% of all total educated foreign-born population (with the average median income of $24,022). Thus, based on these results, it is inferred that a low education level has a negative effect on the populations' socioeconomic status such as living in communities with high poverty and rely on public transit compared to Native-Whites.

The results show the immigrants who only speak in English live in neighborhoods with overrepresented native-born whites. Immigrants who speak English "very well" live in neighborhoods where both groups are equally represented. The results again confirm that well-educated and English speaking immigrants are faring better in Atlanta MSA. This proficiency in the English language is quite important to improving the foreign-born population location choices and decreasing the segregation levels in Atlanta MSA. Immigrants who came to the U.S.A well prepared are faring better in housing market. On the other hand, foreign-born populations who do not speak English well or do not speak English at all live in segregated neighborhoods with over represented foreign-born populations. The concentration of non-English-speaking immigrants in similar residential locations helps preserve the ethnic language; however, it increases the use of the

immigrants' first language, decreases their ability to learn English and their opportunity to obtain better jobs and assimilate with the American cultures.

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